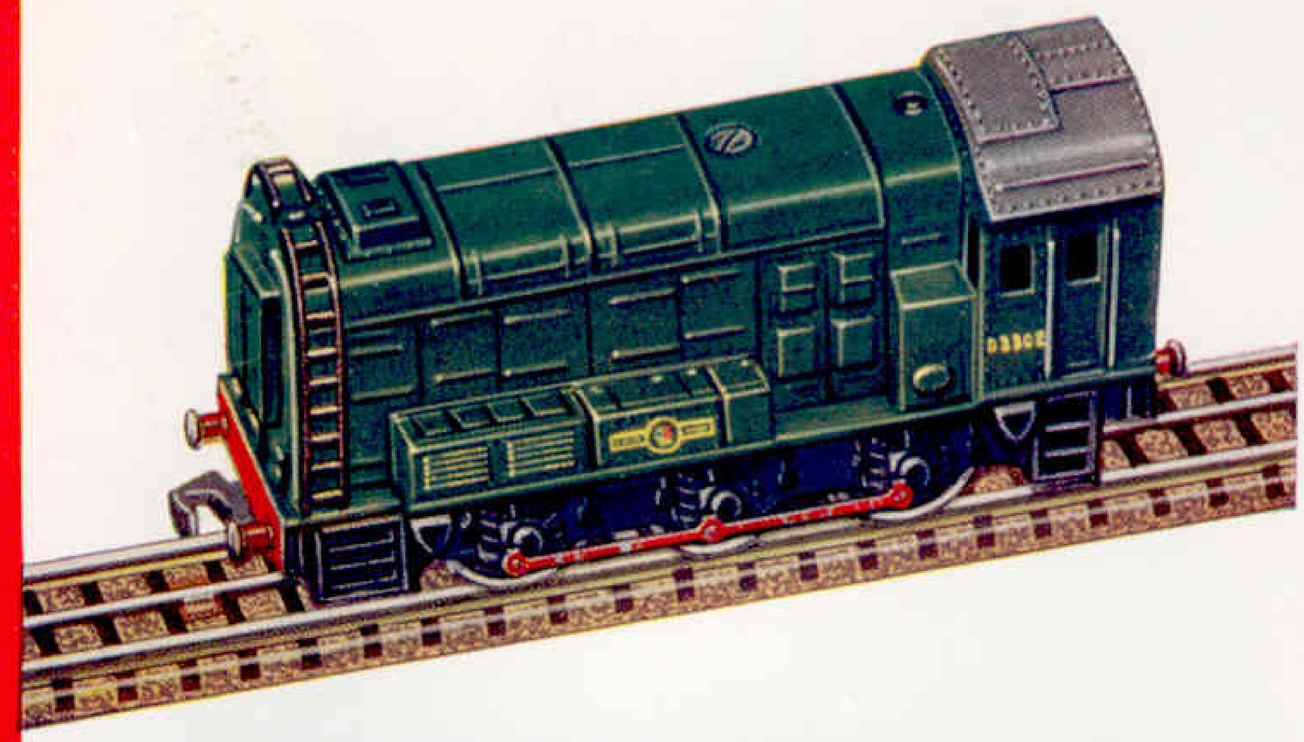
VOL. XLVI. No.5 MAY 1961

MECCANO MAGAZINE

1/3

SHIP'S FIGUREHEAD
(See Page 152)

2 fine NEW Locos



HORNBY-DUBLO

Now available for 3-rail system

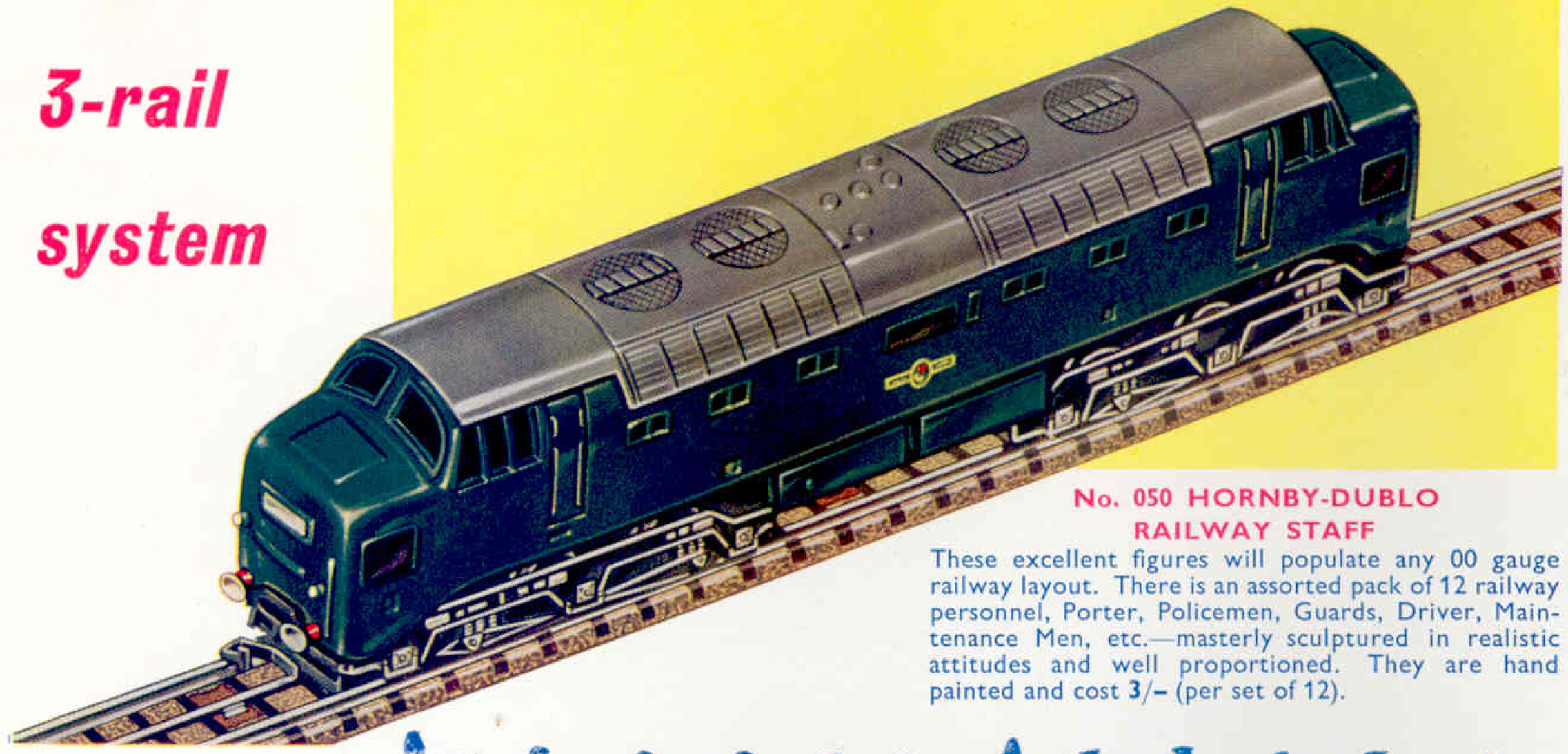
Here are the two newest Locomotives in the Hornby-Dublo range, both fitted with the amazing Ring Field Motor giving increased power, finer control and smoother running.

No. 3231 0-6-0 DIESEL-ELECTRIC SHUNTING LOCOMOTIVE

The Hornby-Dublo 0-6-0 Diesel-Electric Shunting Locomotive is representative of several hundred British Railways Standard diesel-electric shunting locomotives familiar in marshalling yards all over the country. Finely detailed plastic housing. Die-cast frame and base. U.K. Price **£2.18.6**

No. 3232 CO-CO DIESEL-ELECTRIC LOCOMOTIVE

The Hornby-Dublo Co-Co Diesel-Electric Locomotive is based on a 3,300 h.p. diesel-electric locomotive designed by the English Electric Company Ltd., for heavy main line service on British Railways. Die-cast housing, frame and base. U.K. Price **£4.2.6**



No. 050 HORNBY-DUBLO RAILWAY STAFF

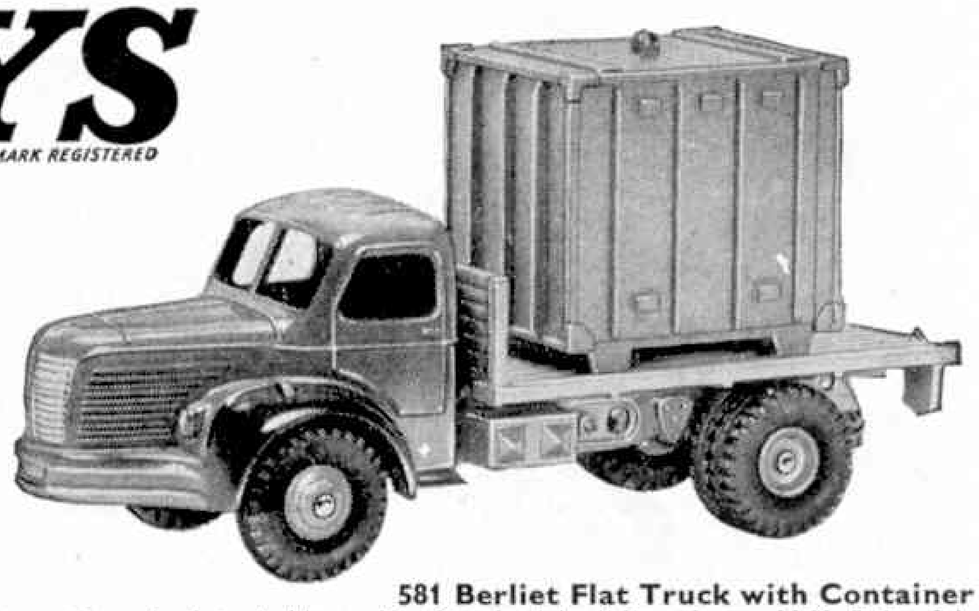
These excellent figures will populate any 00 gauge railway layout. There is an assorted pack of 12 railway personnel, Porter, Policemen, Guards, Driver, Maintenance Men, etc.—masterly sculptured in realistic attitudes and well proportioned. They are hand painted and cost **3/-** (per set of 12).

DINKY TOYS
TRADE MARK REGISTERED

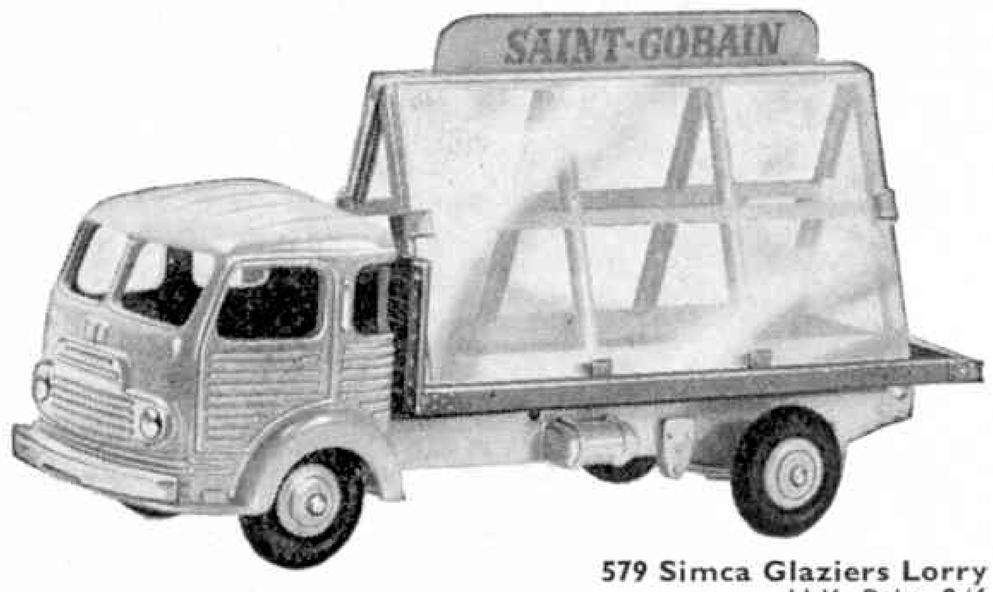
from PARIS

A separate range of Dinky Toys is made by Meccano (France) in Paris. Several of these Paris models have been imported into the U.K., and they are illustrated here. Ask your Dinky Toys dealer to show them to you.

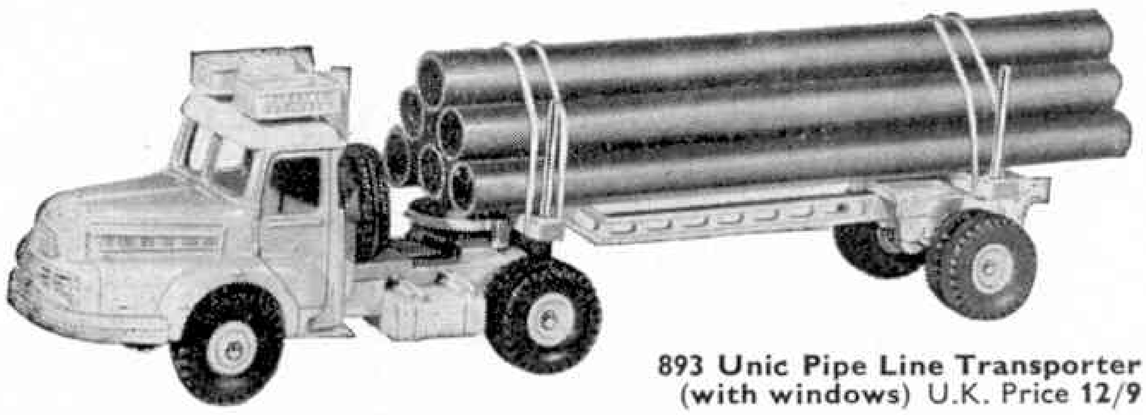
★ ★ ★



581 Berliet Flat Truck with Container
The container is detachable and is fitted with sliding door. U.K. Price **9/–**



579 Simca Glaziers Lorry
U.K. Price **8/6**



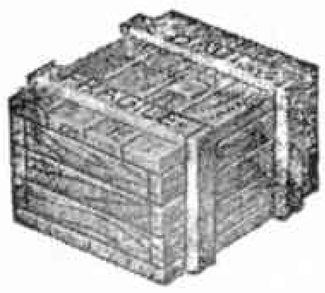
893 Unic Pipe Line Transporter (with windows) U.K. Price **12/9**

LOADS FOR YOUR LORRIES

Here are some fascinating accessories from our Works in France. They may be used most realistically with Dinky Toys lorries and wagons, and with Hornby-Dublo electric trains. They are made in plastic, and the cases are splendid imitations of wooden packing cases, one side of which is removable. The barrels consist of two halves which can be fastened together and opened by pressing a small "bung" in the centre, and the bottles may be removed from the containers in which they are placed.

846

847



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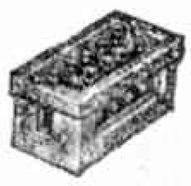


850

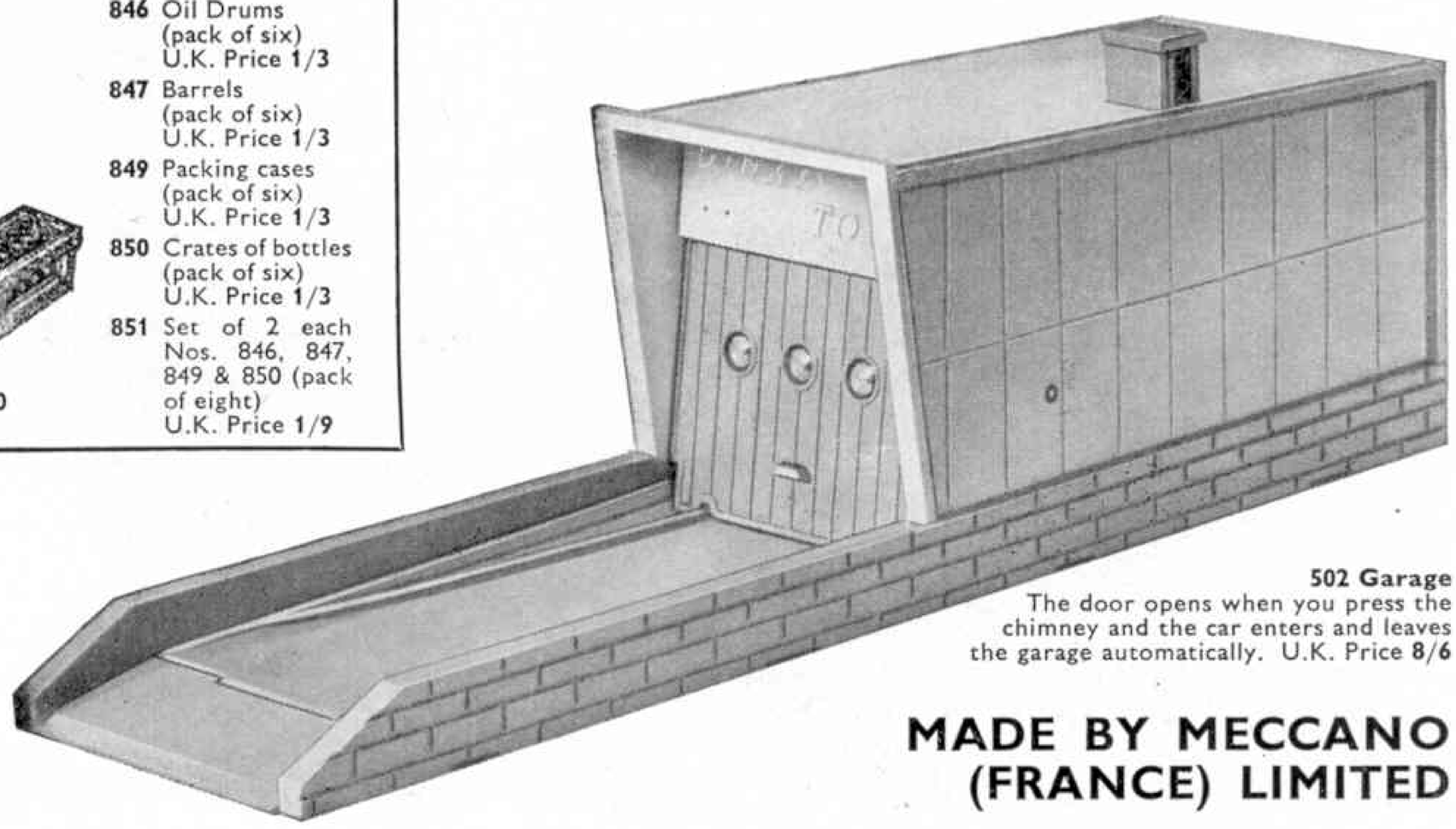
846 Oil Drums (pack of six) U.K. Price **1/3**

847 Barrels (pack of six) U.K. Price **1/3**

849 Packing cases (pack of six) U.K. Price **1/3**

850 Crates of bottles (pack of six) U.K. Price **1/3**

851 Set of 2 each Nos. 846, 847, 849 & 850 (pack of eight) U.K. Price **1/9**



502 Garage
The door opens when you press the chimney and the car enters and leaves the garage automatically. U.K. Price **8/6**

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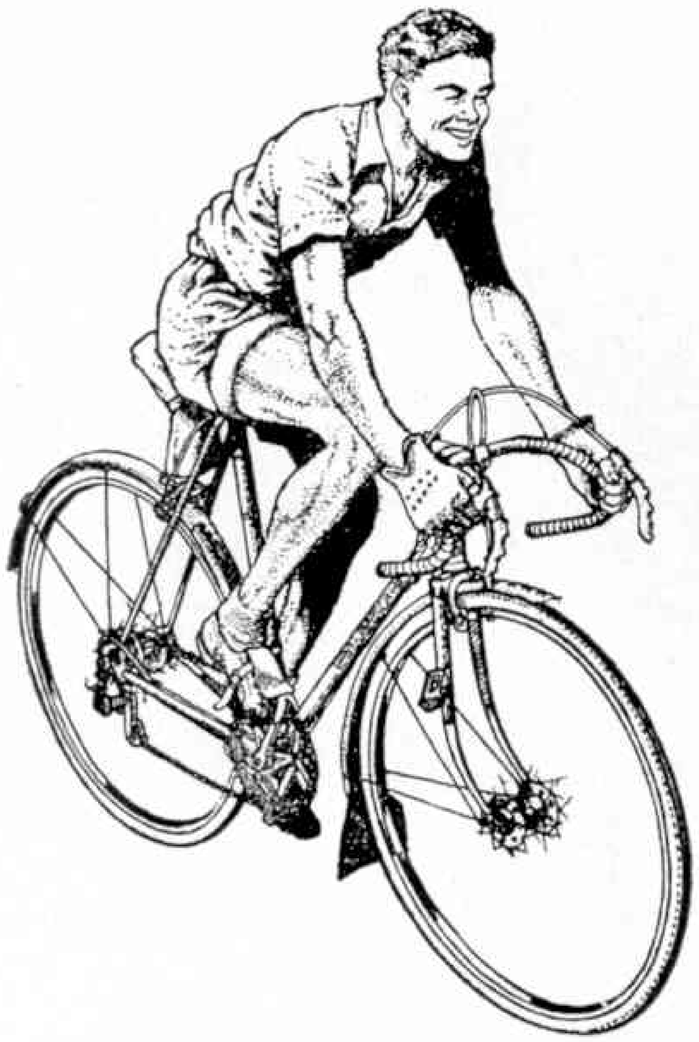

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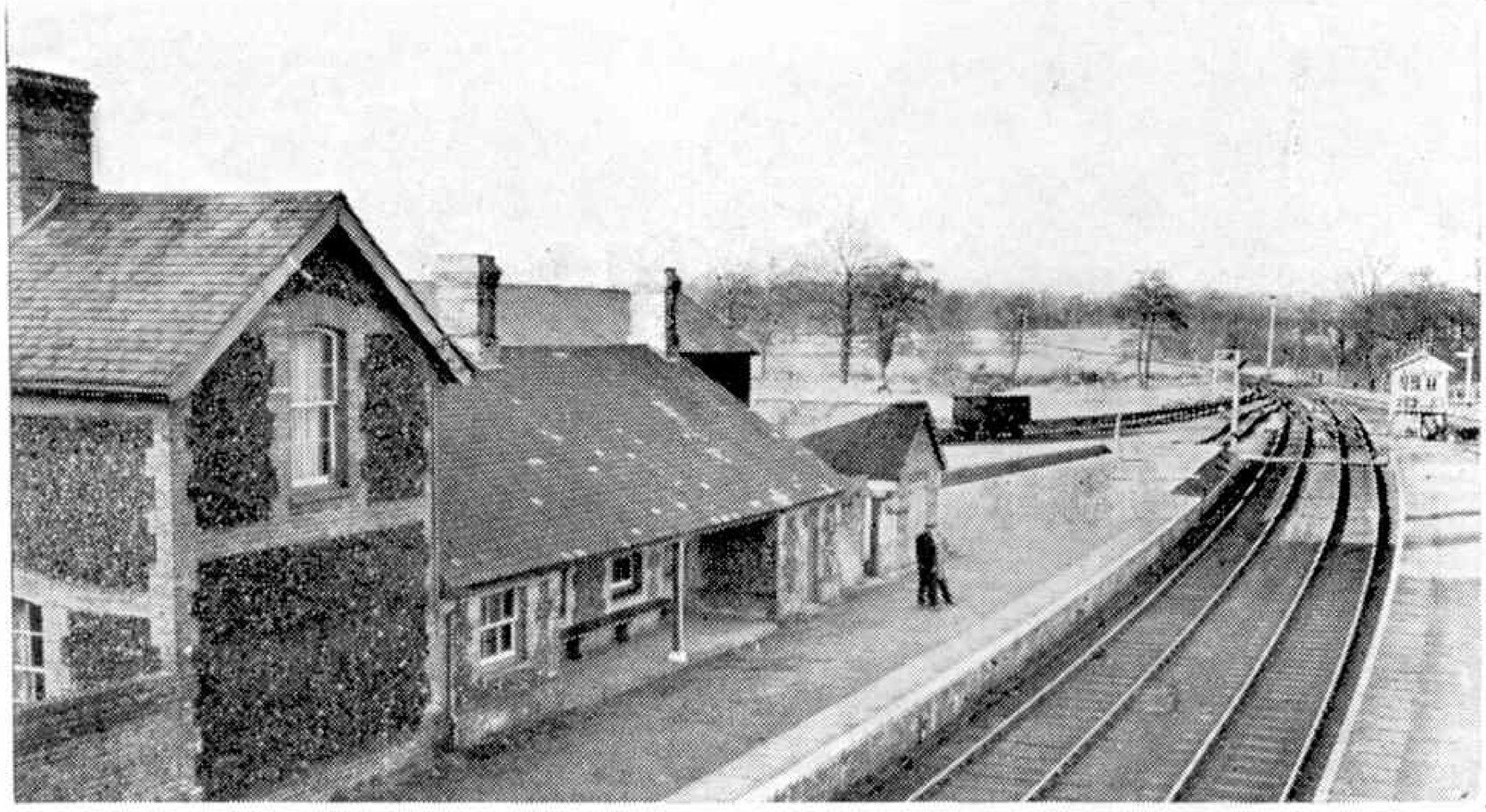

LOOK!

PLAY RISK — IT'S SMASHING! This exciting new game has already swept America and the Continent. You'll *love* RISK, especially if you've ever played Monopoly . . . be first in the field to learn this exciting game. Engage in fascinating inter-Continental manoeuvres, match your skill against your pals and test your knowledge of strategy with new w-o-n-d-e-r-f-u-l RISK!

27/6

RISK!

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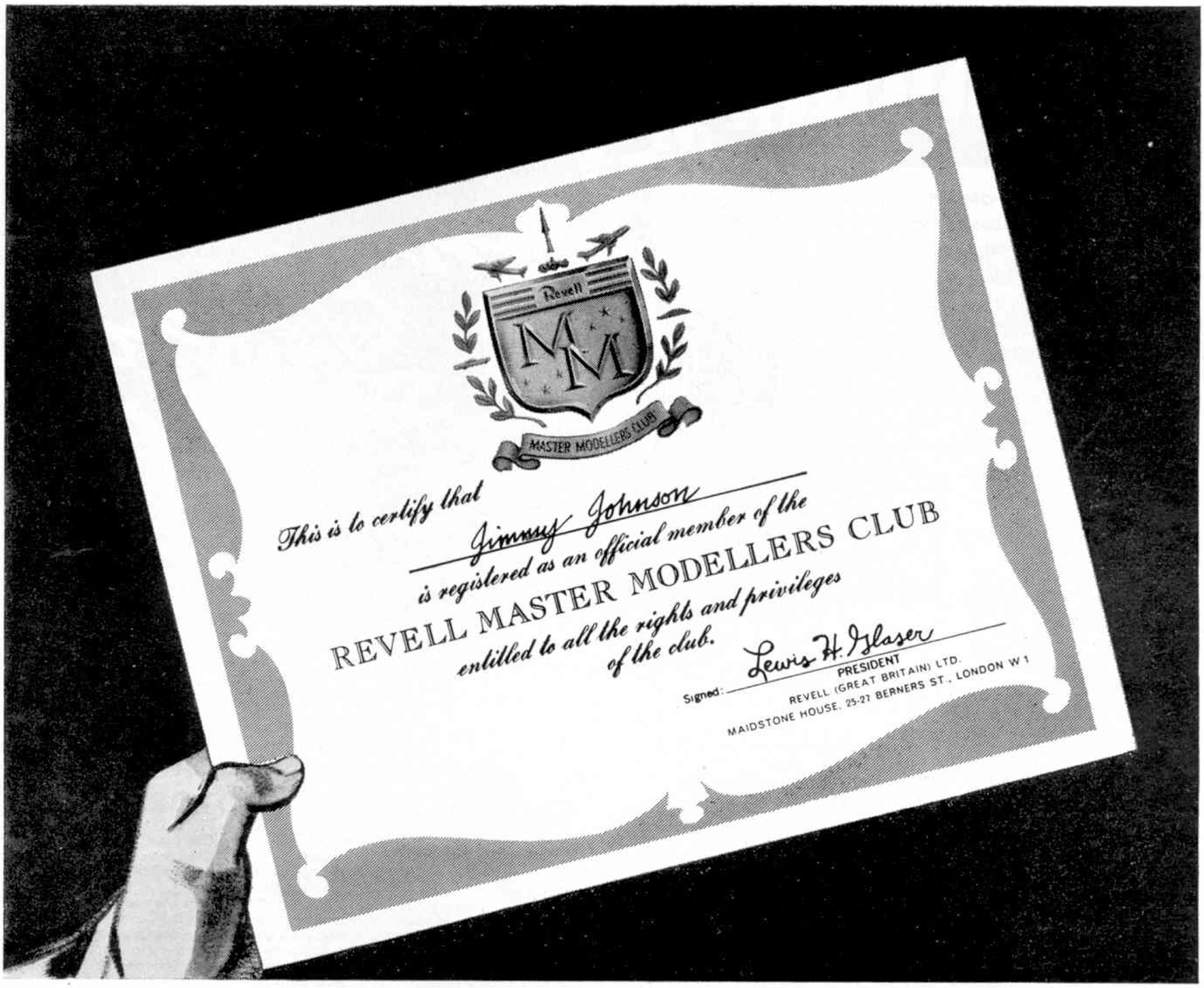
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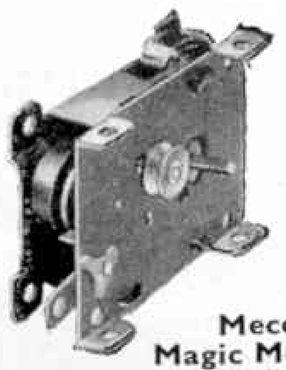


Meccano Magic Motor
Non-reversible; specially intended for driving small models built from Outfits Nos. 00 to 5. U.K. Price **6/11**

Meccano No. 1 Clockwork Motor
Suitable for driving many of the larger models. It is fitted with reversing mechanism. U.K. Price **£1.0.6**

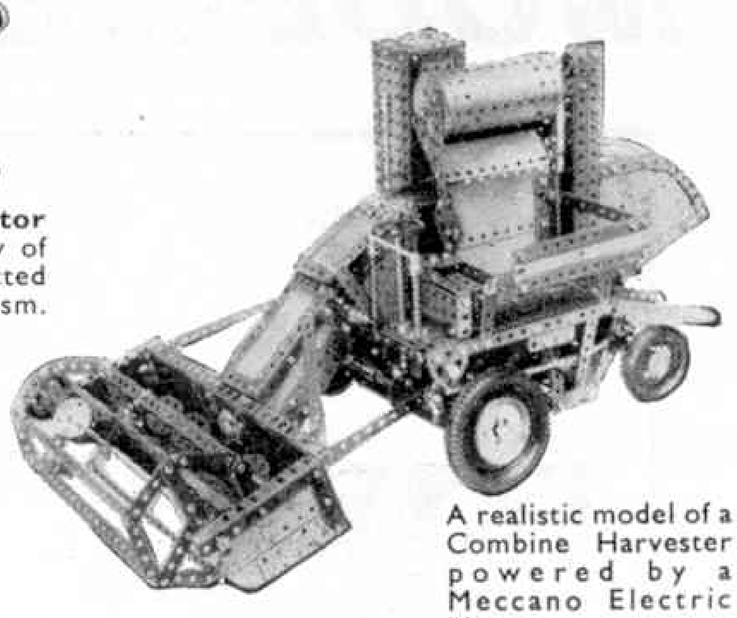
Meccano No. E15R Electric Motor.
A powerful 15–20 volt motor with reversing switch fitted with TV interference suppressors. U.K. Price **£2.2.6**

MECCANO MOTORS

After building a Meccano model, the crowning thrill is to move a control lever and set it working exactly like its full-size counterpart.

Three Meccano Motors are available, two clockwork and one electric.

If alternating current is available from the mains a Meccano Electric Motor can be run through a suitable transformer. Where A.C. supply is not available, the E15R Electric Motor will be found to give adequate power when run from a 12-volt car battery.



A realistic model of a Combine Harvester powered by a Meccano Electric Motor.

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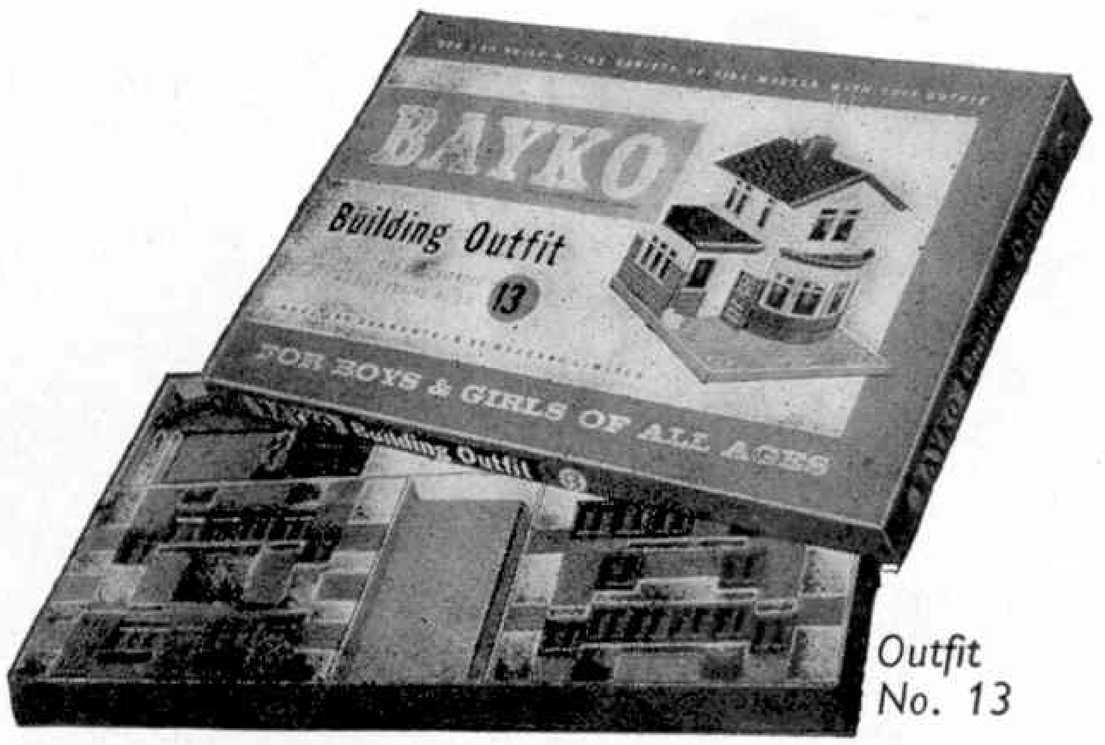
BAYKO

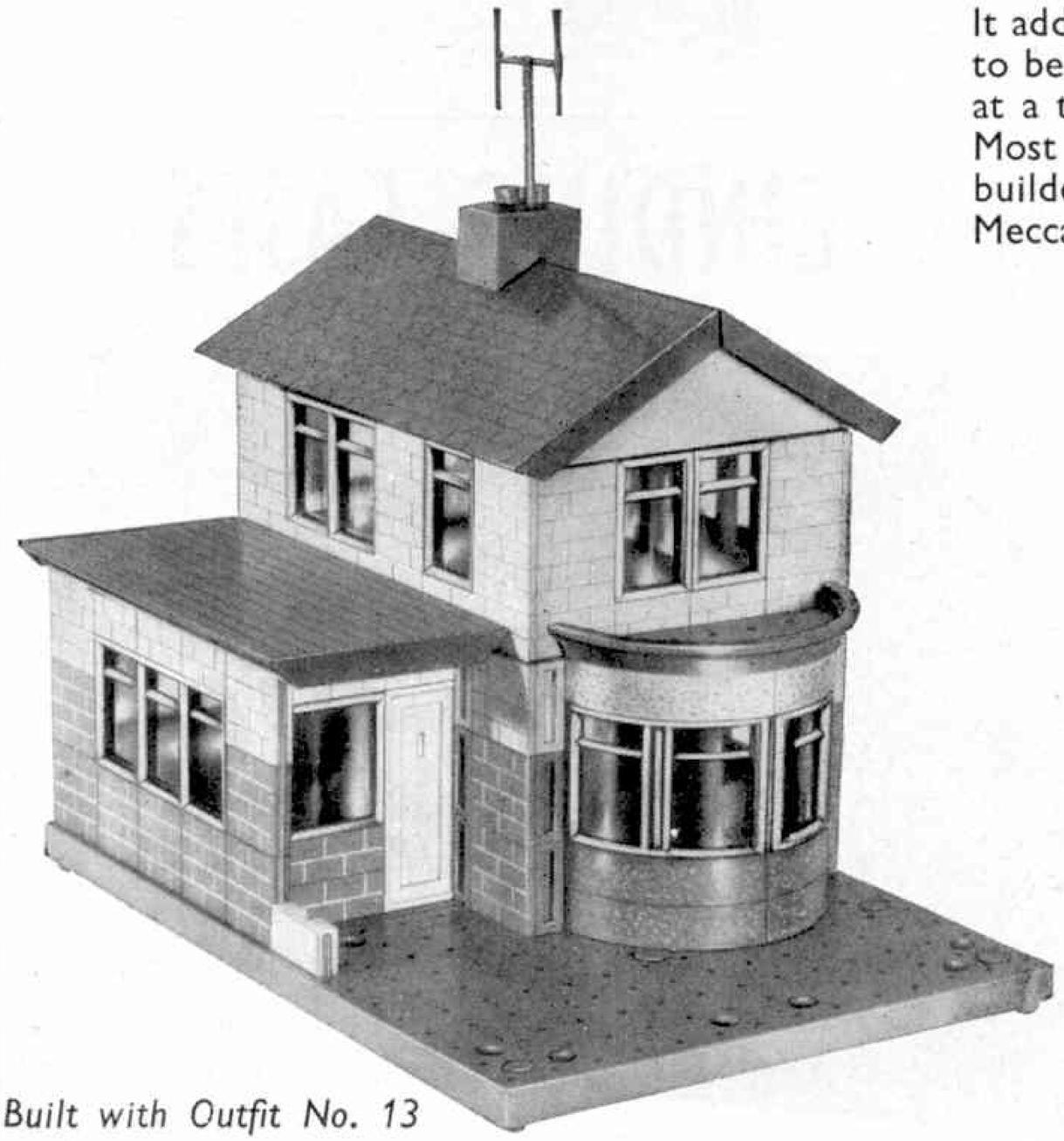
FOR BOYS AND GIRLS

BUILDING OUTFITS

Bayko is a fascinating moulded building toy—for Girls and Boys. It is easy and clean to handle, yet firm and rigid in construction. The Instructions Book gives easy-to-follow examples of interesting models of buildings of different kinds, but the best fun follows when modellers become their own architects and build models to their own designs. Sky-scrapers, multi-storey flats, hotels, air-ports and office blocks are typical models that ambitious young builders can build with standard Bayko parts.



Outfit No. 13



Built with Outfit No. 13

It adds greatly to the fun and interest of the hobby to be able to purchase spare parts separately a few at a time, to build these attractive larger models. Most Bayko dealers stock spare parts. Model builders unable to get spares should write to Meccano Limited.

Bayko Main Outfits

No. 11 Outfit	**10/6**
No. 12 Outfit	**18/6**
No. 13 Outfit	**26/–**
No. 14 Outfit	**39/6**

Bayko Accessory Outfits

No. 11c Accessory Outfit ..	**8/3**
No. 12c Accessory Outfit ..	**10/9**
No. 13c Accessory Outfit ..	**18/6**

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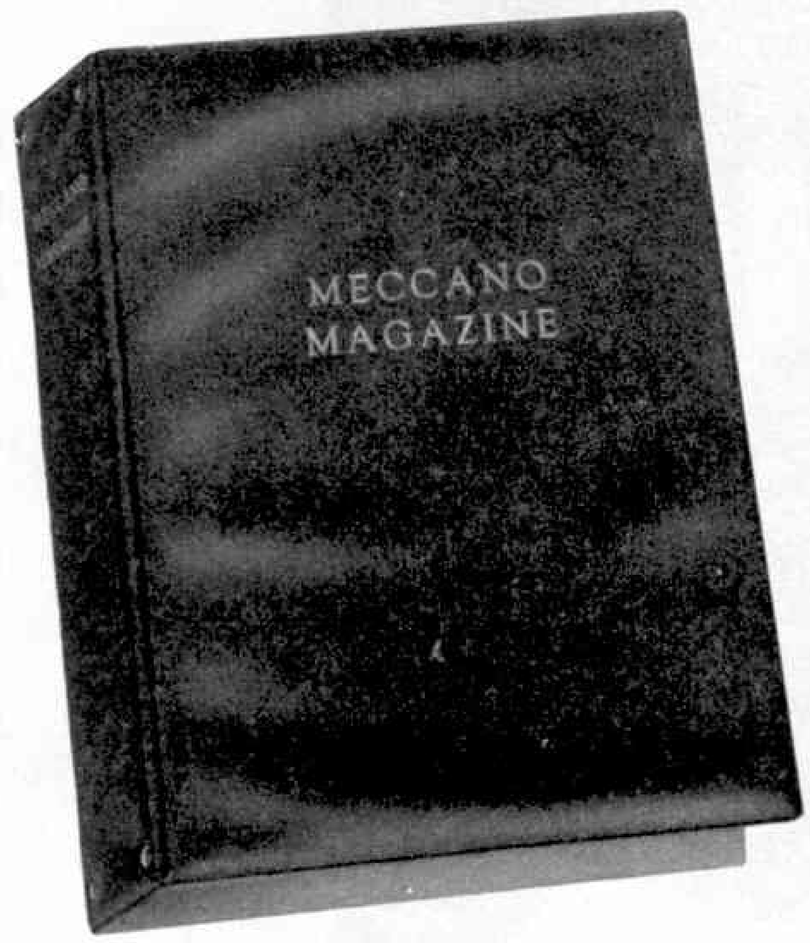
The binders are blue in colour with the words "Meccano Magazine" embossed in gold gilt on the spine and front. Metal rods hold the magazines in position and single copies can be inserted as received. Being made of plastic, the binders are washable and there will be little difficulty in keeping the covers clean.



PRICE

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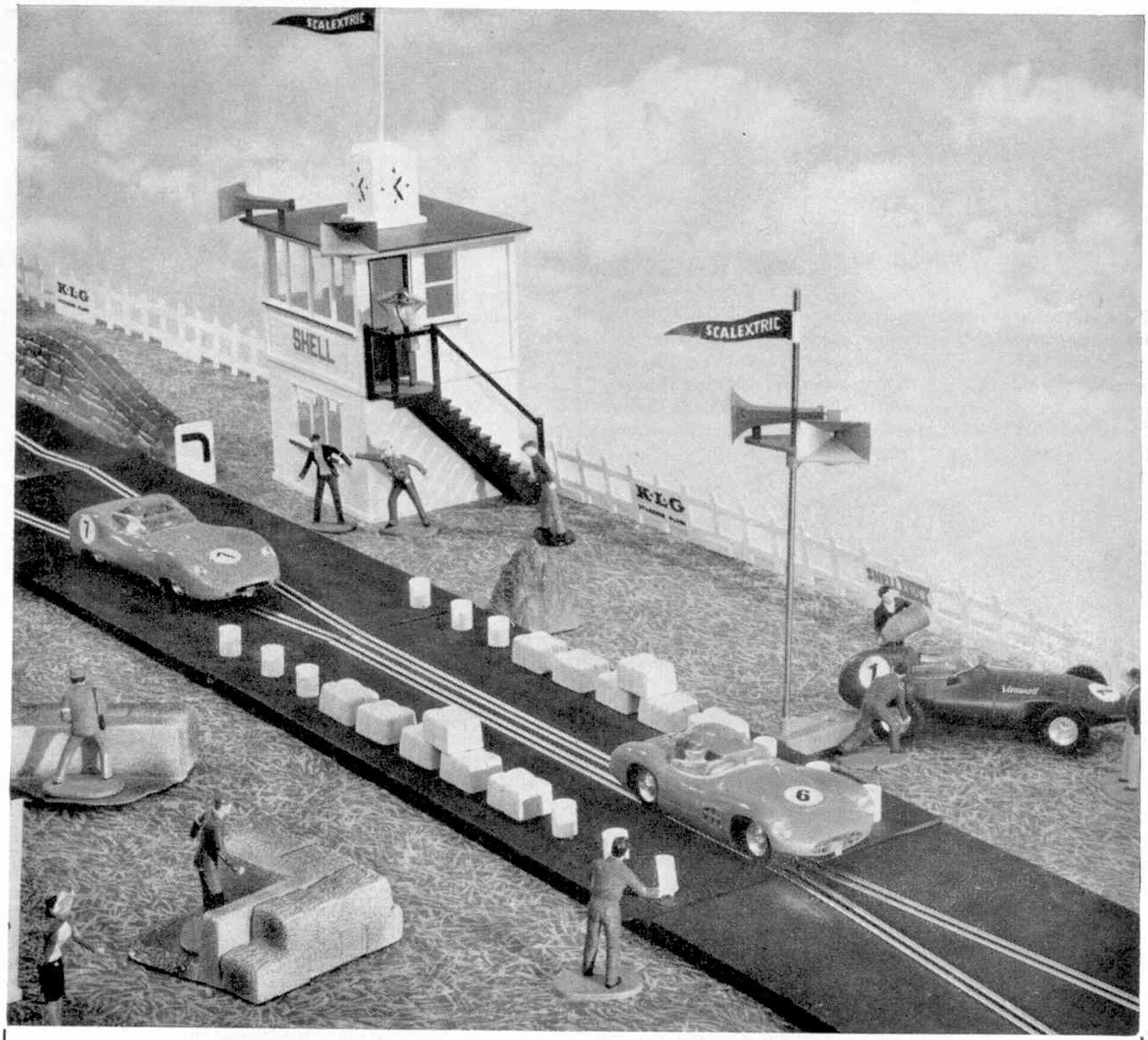
(POST FREE)

For your binders write to Publishing Department, *Meccano Magazine*, Binns Road, Liverpool 13, enclosing postal order.



THE CHICANE . . .

In a closely contested race, "taking the Chicane" becomes an important manœuvre. It is advisable to try to gain a slight lead over your opponent before entering. If, on the other hand, you fail to achieve this, and indeed are slightly behind, it is better to throttle down and so avoid a collision. There will be more tips from the Scalextric pits in the future.

Tri-ang D

SCALEXTRIC REGD

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PRODUCT OF THE LINES BROS. GROUP OF COMPANIES, MERTON, S.W.19

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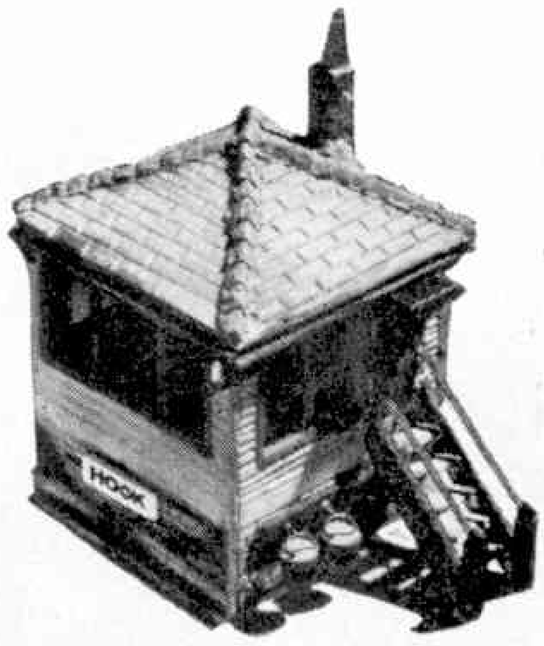
SANKEY'S PYRUMA PLASTIC CEMENT



Made by amateur modellers, this signal cabin and lighthouse show how, with Pyruma, you can get the effects of tiles, wood, brickwork, chimney pots, concrete—and even the rocks of the sea. The book offered below tells you how. Pyruma is obtainable from your local Ironmonger, Hardware Store or Art Material dealer.

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MECCANO SPECIAL MODEL LEAFLETS

Twenty Meccano Special Model Leaflets are available for the delight of enthusiastic model-builders. Each leaflet contains full instructions for building an attractive, realistic model, with many excellent sectional photographs, and particulars of the parts required. The range is listed below.

		Price
No. 1 (6-pages)	Railway Service Crane	1/3
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No. 11 (8-pages)	Automatic Snow Loader	1/6
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No. 18 (8-pages)	Bottom Dump Truck	1/6
No. 19 (8-pages)	Road Surfacing Machine	1/6
No. 20 (6-pages)	Mechanical Loading Shovel	1/3

Instructions for Meccano Outfit No. 10 comprising Leaflets 1 to 12, are available in an attractive wallet. Price **15**/– plus postage.

MECCANO

★

Obtainable from Meccano dealers, or direct from Meccano Ltd., Binns Road, Liverpool 13 (postage extra: 1–3 copies 7½d., 4–6 copies 9d., 7–9 copies 10½d., 10–11 copies 1/–, 12 or more copies in wallet 1/6). The above prices and postal rates apply only in the United Kingdom.

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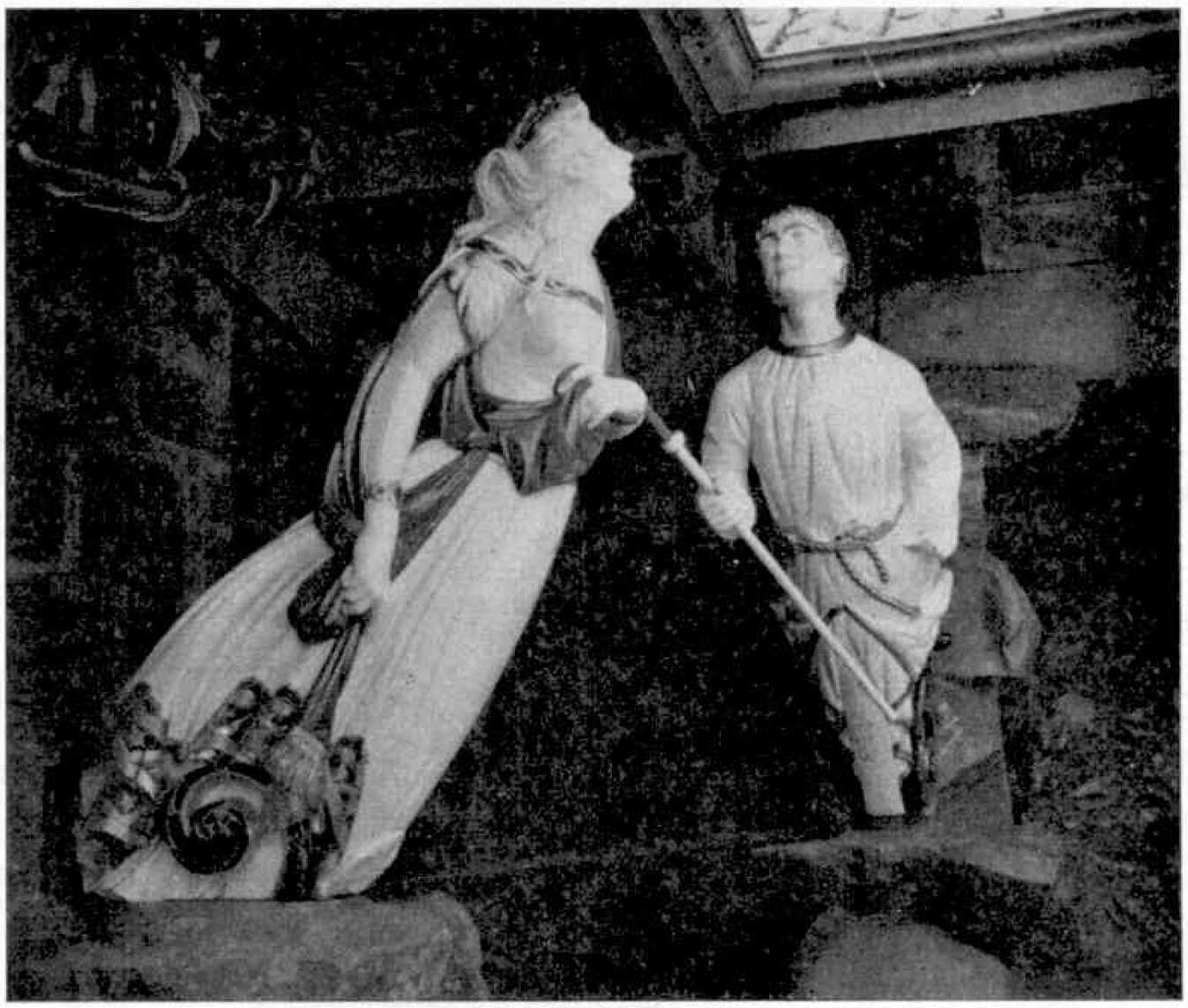
The Beginning of a Wonderful Hobby

MECCANO MAGAZINE

Volume XLVI No. 5 May 1961



AS this is a special 60-page issue of the *Meccano Magazine*, and there are so many items I want to announce in our contents panel, I have included in these notes the reference to the front cover which normally appears in column three. You will, however, find the black and white reproduction of the cover in its usual place. It shows one of the ships' figureheads which form a fascinating collection on the Island of Tresco, and the front cover itself is based on a transparency taken by Mr. L. Hugh Newman who, on pages 152–153, describes this unusual display of relics. There is an intriguing air of mystery about the cover subject, for no one knows which ship the girl portrayed there came from. The two carvings shown above are also in the collection, the facing figure being that of Friar Tuck of Sherwood Forest fame.

The centre pages of this issue contain the article on Dinky Toys to which I referred last month. Main topic is the production of the new Dinky Toys model of the Austin Seven Countryman, coincidentally with which is released the Morris Mini-Traveller, and you will find that Patric Baker has many interesting things to tell you about the Morris "Babies" in his series, *They Were Different Then*. As I put together the story of Dinky Toys production I was struck by the similarity of methods in the Meccano factories and in the Austin Works at Longbridge, Birmingham. In the early stages the firms follow almost parallel lines, particularly in regard to the fragmentation of the complete drawings and the scaled model making. The actual body of the Austin Seven Countryman is of hydraulically pressed steel; that of the Dinky Toy of zinc alloy, but both have immense strength to withstand the demands that may be made upon them. The Dinky Toys casting is primed, before enamelling, in a phosphating plant; the welded body shell of the Austin Seven Countryman goes into the slipper-dip, but although these operations are somewhat different the ultimate aim is identical—that the car body, when painted, shall have a perfect sheen and a durable finish. I hope you find the story interesting.

THE EDITOR

Next Month: BALTIMORE'S RAILROAD MUSEUM

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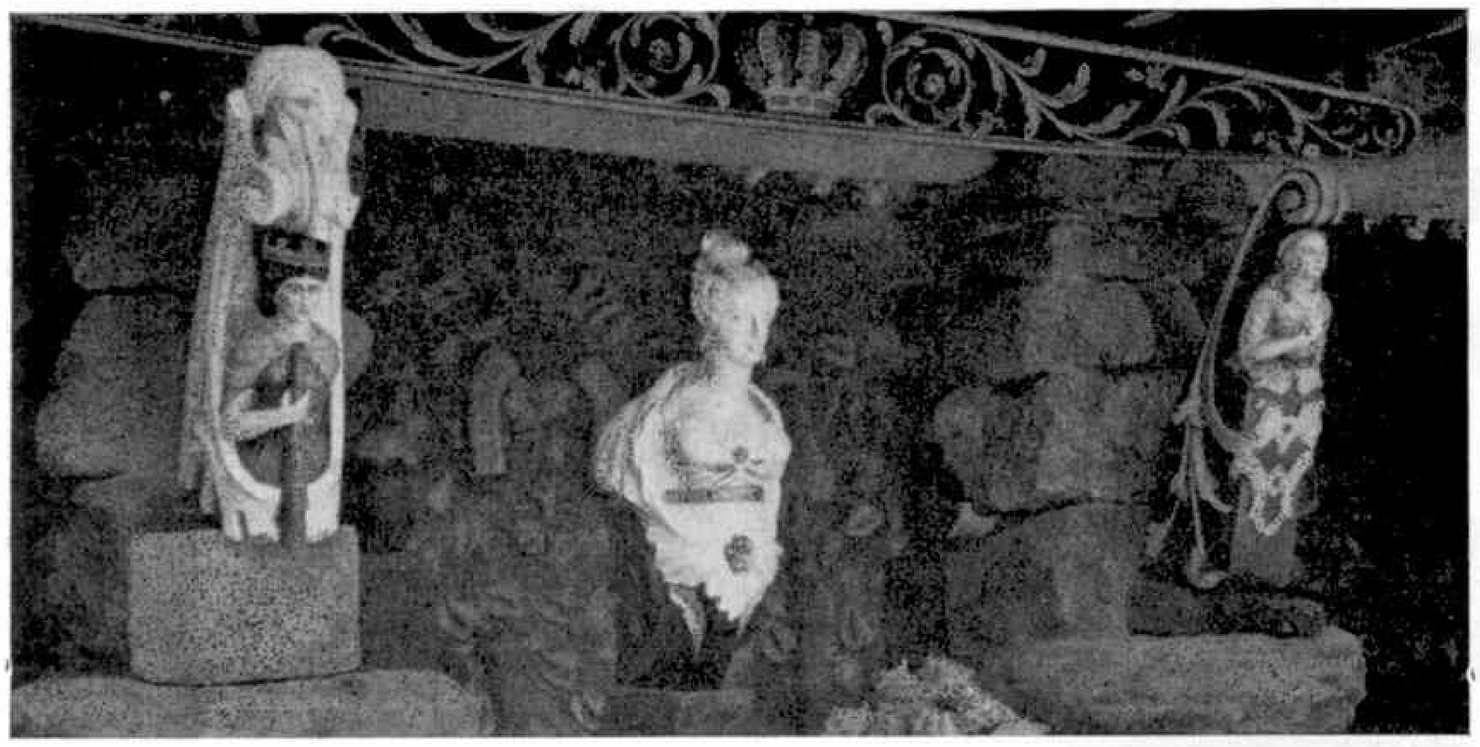
OUR FRONT COVER



Ships' Figureheads On Tresco

By L. HUGH NEWMAN

THE Isles of Scilly lie in the centre of one of the greatest shipping arteries of the world. In the early days, when the merchant vessels of England were beginning to build up her prosperous trade with other countries, most of the commerce, both export and import, had to pass this group of islands, notorious for their treacherous waters.

Some idea of the goods these vessels carried can be had by reading Sir Charles Whitworth's "State of Trade (1776)".

"Down the Channel," he wrote, "came gunpowder, hardwares, woollen manufactures of all kinds, tobacco, spirits, leather goods, fish. Up it came oranges, drugs, ivory, wine, sugar, dragon's blood, pomegranates, lemons, gold, diamonds, silk, tea, pepper, coral, cotton, fruits, beads, oils, soap, bugles, lambskins, olives, anchovies, aniseed, gums, brimstone, chip hats, cochineal, almonds, indigo . . ."

A proportion of this valuable merchandise, however, never reached its proper destination, for wrecks were frequent in those faraway days when each sailing ship had a figurehead mounted proudly on the prow.

Only means of livelihood

Reading Miss Juliet du Boulay's comprehensive article "Wrecks of the Isles of Scilly", published in the quarterly journal of the Society for Nautical Research, one realises there was a period in the history of these islands when "wrecking"—that is, the gathering of loot or salvage from any vessel that foundered on the rocks which abound round the islands—was the only means of livelihood for the majority of the inhabitants.

A prayer attributed to the Chaplain of St. Mary's near the end of the eighteenth century shows the really desperate plight of the people at that time:

"*We pray Thee, O Lord, not that wrecks should happen, but if any wrecks should happen, Thou wilt guide them into the Scilly Isles for the benefit of the inhabitants.*"

The West has always been ill-famed for its shipwrecks, and one of the worst disasters ever recorded was during the early evening of October 22, 1707, when Sir Cloudsley Shovell's whole fleet found itself among these rocks. In a high wind, tumultuous seas and bad visibility more than 2,000 men lost their lives.

But every wreck has not ended in such tragedy. In late November 1863 a number of sailing ships put into St. Mary's Roads for shelter, and among them was the *Friar Tuck*, a tea clipper of 662 tons, coming from Foo-chow-foo with a cargo of prime China tea. A few days later, in the early hours of the morning, a gale sprang up "such as the oldest inhabitant never remembered to have seen before", to quote an eyewitness account from a local Cornish newspaper. This was, in fact, one of the few tornadoes ever experienced in Britain. It passed right across the country, leaving havoc in its wake.

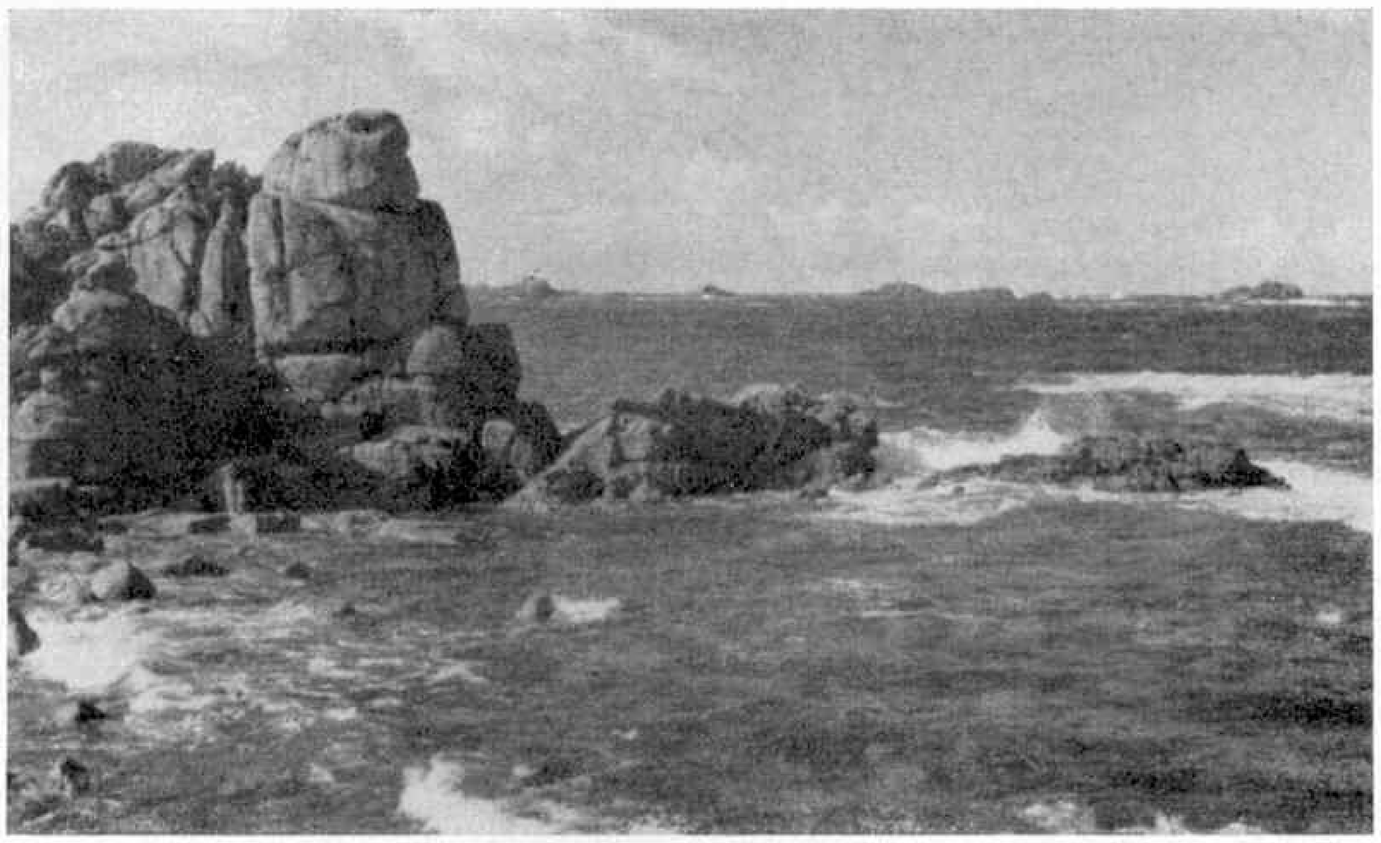
The *Friar Tuck* parted her cables and was driven ashore on Newford Island. Salvage operations were started when the seas moderated and three shiploads of tea were rescued and taken to London. But a fine opportunity presented itself to the islanders, because when the tide is out you can walk across from St. Mary's to Newford Island. Under cover of darkness, men who knew the causeway raided the ship, and people say that in the Scilly Islands you can still be given a cup of *Friar Tuck* tea on very special occasions!

Nowadays, there is a modern radar station on St. Mary's Island, and wrecks are almost a thing of the past. Even so, the Scillies can still be dangerous, and it is only five years since the *Mando* struck Golden Ball Bar in a fog and was completely wrecked.

On the island of Tresco there is a remarkable collection of ships' relics which is a vivid reminder of the terrific toll the sea has taken in these waters. Most of them are figureheads, and the building in which they are housed is known as Valhalla, the name which, in Scandinavian mythology, denoted the home of the gods and the resting place of warriors after death.

The building is decorated with pebbles and sea shells and the figureheads themselves, raised on granite boulders, are supported from behind by metal struts so that they stand out at an angle as they would on the prow of a ship. Had it not been for the foresight of Augustus Smith, who leased the islands from the Duchy of Cornwall in 1834, and the continued zest of his nephew and his descendants, this

The beautiful figurehead of the *Mary Hay* painted in gold and white is seen above flanked by two smaller coloured figures; that on the right of the picture is the one shown on our front cover. Right: *The Chieftain*—a wonderfully realistic figurehead from a ship which was wrecked in 1856. All illustrations in this article are by L. Hugh Newman.



Where many wrecks have occurred: Looking out from Hell's Bay on Bryher Island to the dangerous rocks outside.

unique collection would never have been assembled and preserved for posterity. Not only were the actual figureheads, in human and animal form, rescued from decay, but nameboards and sternboards were also saved.

Found under hedges

The relics were found all over the islands, most of them in a dilapidated condition, standing in gardens, lying on the beaches and even smothered with weeds under hedges. Recently a grant was made by the Historic Buildings Council for the restoration of the figures, and many have been skilfully repaired and painted in their original colours. Through the courtesy of the present owner, Commander T. M. Dorrien-Smith, they are now on view to the public.

One of the most impressive pieces at Valhalla is the sternboard of the *Colossus*, a man of war mounting 74 guns which was wrecked on December 10, 1798. *Colossus*, which once had as her captain George Murray, a friend of Lord Nelson, took part in the battle of Cape St. Vincent, off Portugal. Later she saw service at Malta, but by this time she was deteriorating and was ordered home. On her last voyage she had been chosen to bring to England Sir William Hamilton's best pictures and his collection of valuable Etruscan vases. We are told that, "Scarcely an officer in Lord Nelson's fleet but had put on board some presents for their friends, which had been taken aboard the French fleet." This was presumably valuable loot.

The ship also carried a great many sick and wounded men from the Battle of the Nile, as well as the embalmed body of Admiral Lord Shuldham. Superstitious seafaring people will tell you this is why the *Colossus* was blown on to Southern Wells, a shoal of rocks south of Samson Island.

At daybreak the islanders came to the rescue of those aboard her and, indeed, only one man was lost. He was the Quartermaster, Richard King, who fell overboard when the ship was rolling heavily in terrific seas. Today, at Valhalla, you can see the ship's beautifully-carved sternboard, twelve feet long, painted in black and gold with an elaborate royal crown in the centre. It is said that Sir William Hamilton's treasure still lies among the rocks of Southern Wells.

A superb carving

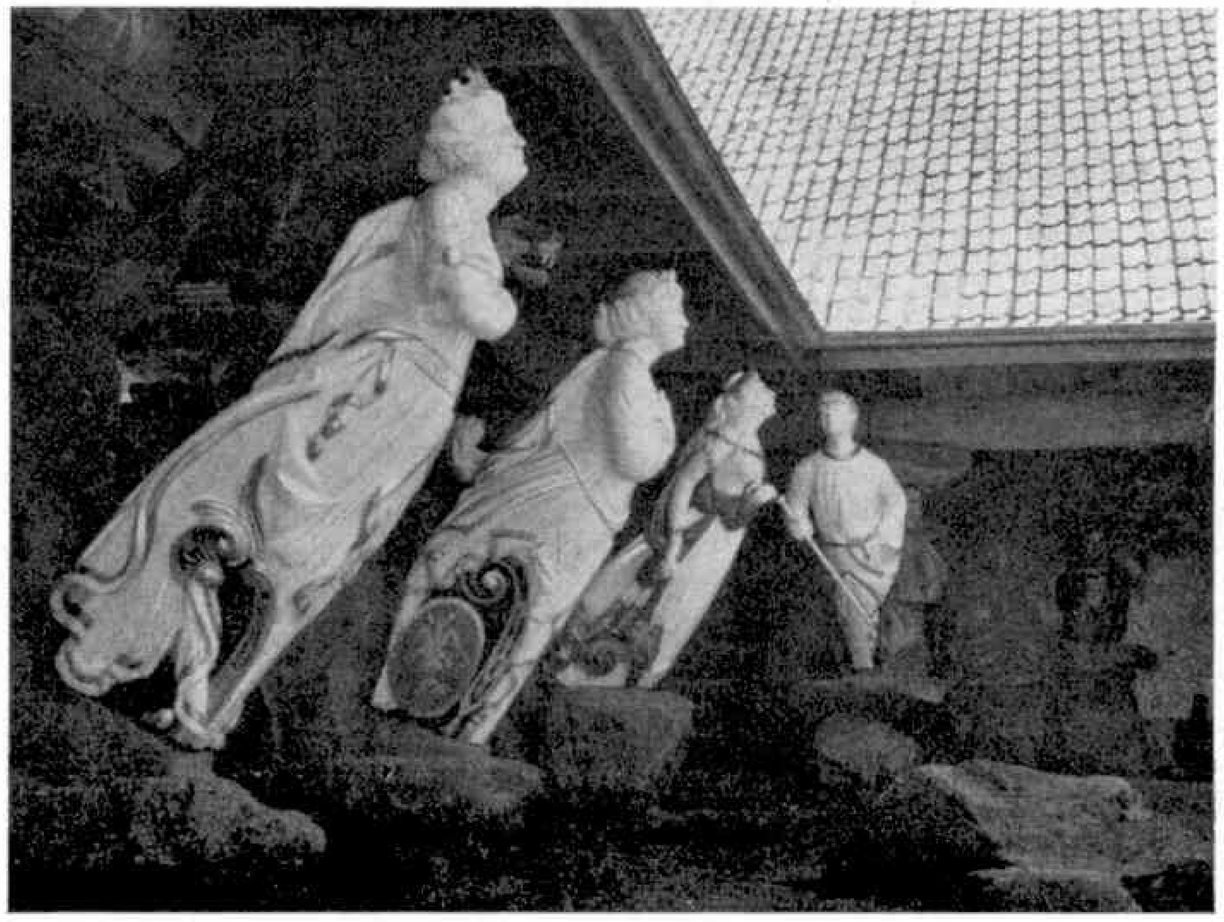
Centrepiece of the exhibition is a superb gold and white figurehead, dated 1852, saved from the barque *Mary Hay*, bound for Jamaica with a general cargo. She had on board a Scillonian pilot, Robert Pender, but nevertheless struck a rock known locally as Nun's Steeple and ran ashore on Bream Ledge. The ship's mascot is a half figure of a woman of surprising beauty with the suggestion of a Mona Lisa smile. Her hair is dressed in Regency style, piled up on top and supported with three golden combs. She wears long, golden drop-earrings and her highwaisted dress is set off with a golden belt.

On either side of this masterpiece are two very colourful figureheads, both of women. On the left as you face the figureheads is an Italian beauty, holding a chart or scroll. She is dressed in a green cloak over a dark blue dress, and wears a red crown. The fiddlehead, or mounting, is particularly elaborate and the figure looks almost to be standing up in a little pulpit. She came from the barque *Bernardo* of Genoa, a vessel of 706 tons, launched in 1876. Twelve years later, the ship met her fate on a group of rocks near Annet during a fierce March gale.

On the other side of the centrepiece is the attractive figure of a young girl with flowing auburn hair, holding a white rose in her hand. She is dressed in a short blue jacket and green skirt, but there is no record of where she came from, or even when her ship was wrecked.

Many people consider *The Chieftain* the finest exhibit in Valhalla. The ship of this name was wrecked on Hard Lewis in 1856 and the figurehead, which has been superbly reconditioned by Mr. H. R. Allen, shows a fine, red-bearded man in Highland dress and Tam-o-Shanter. His dark green jacket has a row of silver fastenings down the front, and draped over his shoulder is a plaid. But the most impressive thing about him is the vivid blue of his eyes—eyes that once gazed across vast oceans from the prow of the vessel he so handsomely "commanded".

From a brigantine, launched at Quebec in 1859 and wrecked on Mare Ledges on January 15, 1871 came a curious figurehead in the shape of a golden salmon. Another is carved to represent a fierce-looking lion and is painted in gold, except for the bright red mouth and gleaming white teeth. The third animal figurehead in the collection is the *Dolphin*. It is highly stylized with blue-green head and red (*Continued on page 189*)



Four more figureheads from the collection described in this article. The figure facing (in background) is that of Friar Tuck.

When The Big Push Starts On The Gradients

STEAM ON THE HILLS

J. W. GAHAN PAYS TRIBUTE TO THAT HARD-WORKING LOCOMOTIVE, THE "BANKER"

A TIME-HONOURED feature of railway operation which is destined almost to disappear from the scene is the Banking engine. It has long been the practice to employ assisting engines at the rear of passenger and freight trains on certain steep gradients, notably the Lickey Incline, and the steep gradients of Shap and Beattock, to name only three of many. These climbs are severe, and a small stud of locomotives—"bankers", as they are known—is continuously available to lend assistance to trains surmounting the inclines.

On the two last-named gradients, passenger trains do not always call for help, but most freight trains do, and it is a spectacular sight, in these wildly-situated places, to see the banking engine, thrusting hard, with a vertical column of smoke and steam soaring heavenward. Sometimes two engines are employed, and on the Lickey Incline, between Bromsgrove and Blackwell, on a gradient of 1 in 37 for two miles, often three 0–6–0 Tank engines will be employed shoving vociferously at the rear of a heavy train. *This is a stirring sight on fine days, but when wind and rain sweep across the hills, operation becomes difficult, and such days are the occasions of slipping driving wheels, thunderous exhausts, and the use of plenty of sand to give spinning wheels a good grip on the rails.*

The Lickey Incline had its own special Banker, an 0–10–0 built for the job, and this engine worked there from 1919 until withdrawn in 1954. It was for many years the only ten-coupled engine in Great Britain.

As a rule banking engines are not coupled to the train; they merely drop off at the summit of the incline and return to the bottom to await the next turn of duty. On long banking sections, however, where there may be a down grade, even a short one, coming between two climbs, the rear engine is coupled, for it would be somewhat risky if the main train got ahead and the assisting engine had to catch up!

On the Central Wales line of the former L.N.W.R., between Llandilo and Craven Arms, there is a long climb in a northerly direction extending from Llandovery up

M. Edwards captured this view of the "Royal Scot" being assisted out of Euston Station by Class 4 2–6–4 Tank No. 42103.

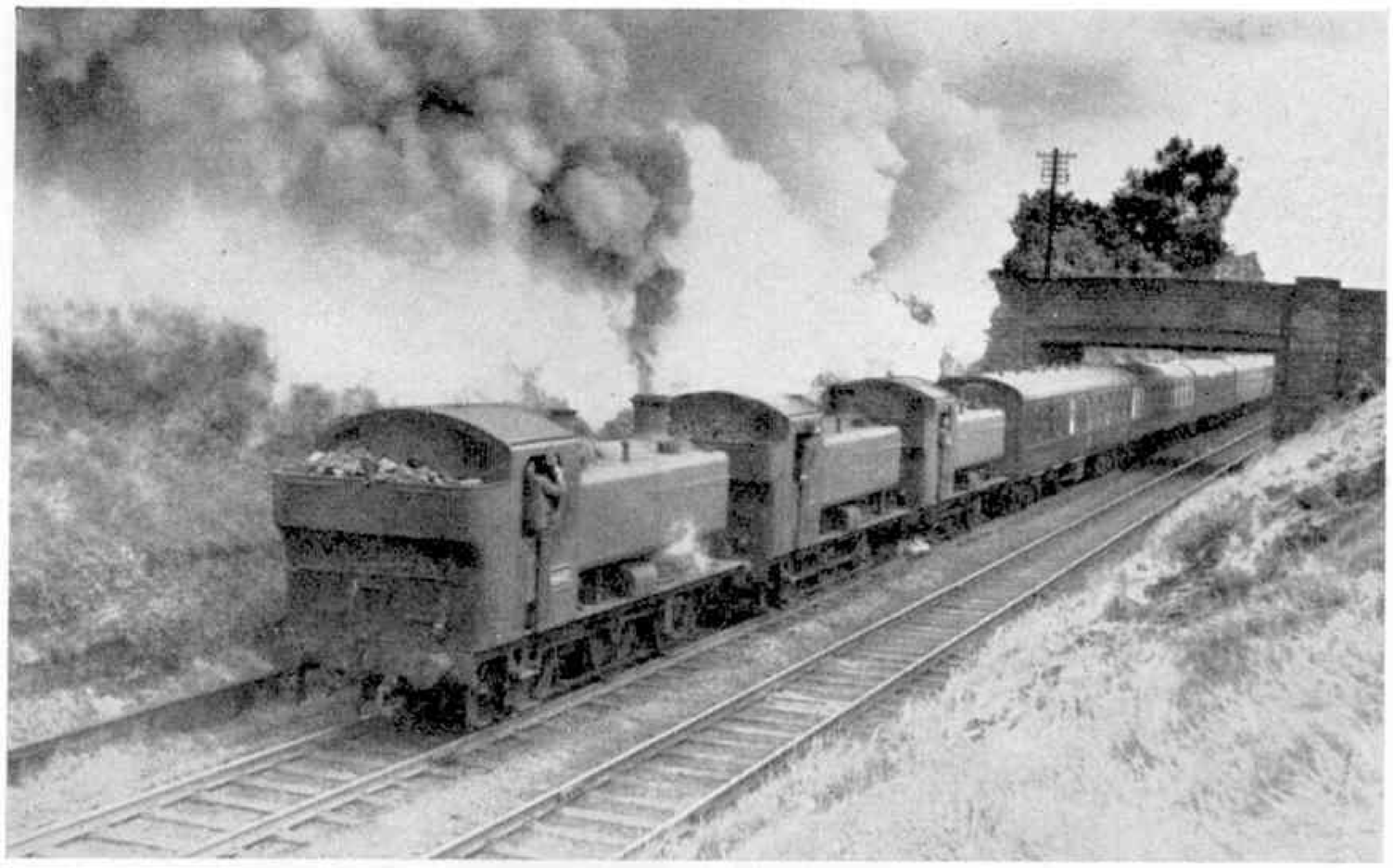
to the summit at Sugar Loaf, so called from a mountain of that name through which a tunnel 1,000 yards in length is bored. Engines of ex-L.N.W.R. type, mainly the "Super D" 0–8–0s have, among others, been employed on this section, and as bankers they are perhaps the most spectacular of all. The loud exhaust of an L.N.W.R. engine working flat out has to be heard to be believed, and it could happen that a passenger in the front coach of a train hauled by, perhaps, a 2–6–4 Tank could actually hear the fantastically angry exhaust of a "Super D" away at the rear, above the noise of the train engine just ahead of him.

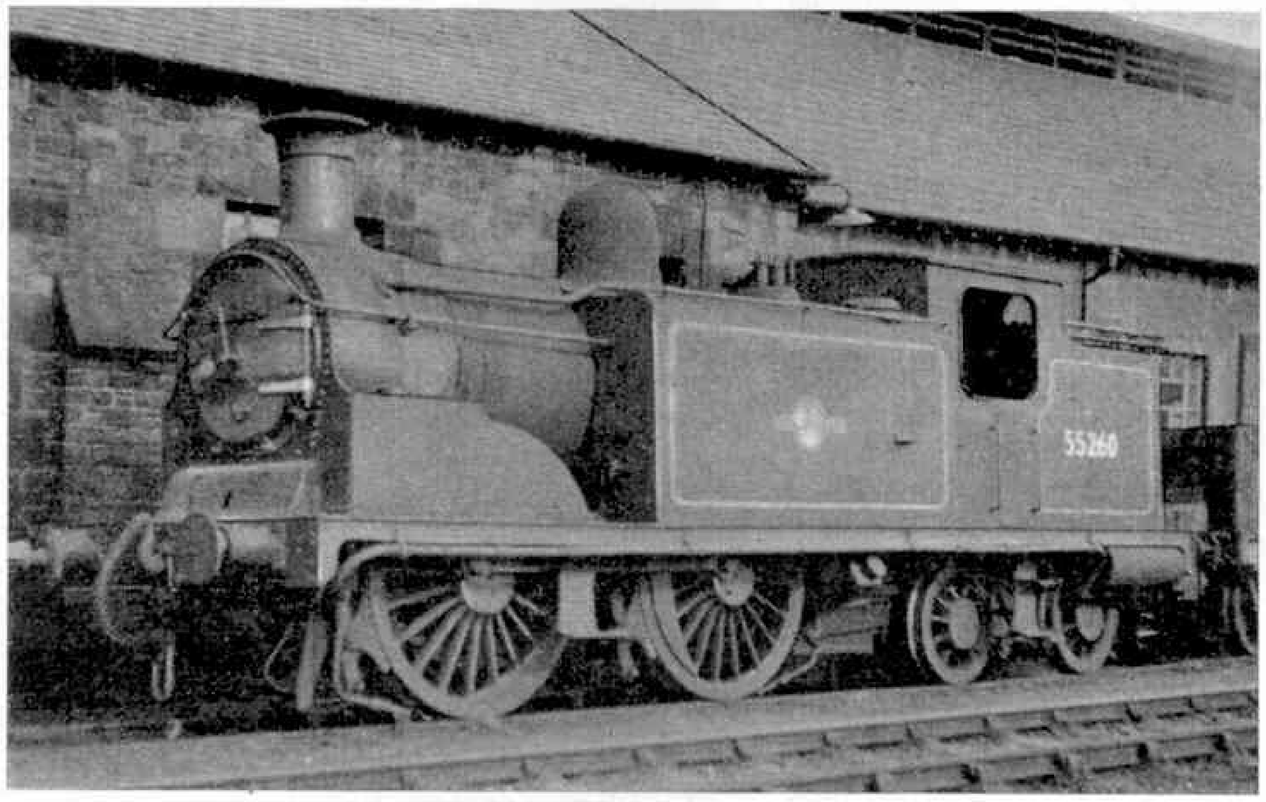
Column of smoke and steam

The track twists and turns and the passenger, looking back, sees the rear engine appear first one side then the other, flinging its column of smoke and steam to a great height. The ordinary passenger does not, alas, have this experience, for the normal passenger trains on this route are well within the capacity of the engines employed, but I had that experience once on a heavy special train. I would have given anything for the chance to be on the footplate of the banking engine!

On Shap incline in Westmorland, situated on the Euston–Glasgow West Coast main line, the engines employed nowadays are ex-L.M.S. 2–6–4 Tanks with enclosed cabs. The section over Shap was originally part of the Lancaster and Carlisle Railway, who used cabless 2–4–0s for banking work. Surrounded by bleak hills Shap is a wild place, even in summer, but in winter, when blizzards rage, negotiating it is quite a problem. Travellers over Shap by road know how quickly snow blockages can occur there, and on the railway strenuous efforts sometimes have to be made to keep the track clear of snow. It must indeed have been

Famous Lickey Incline Banking Engine L.M.R. 58100 at work, assisted by 0–6–0 Tank 47565. Photograph by F. Spencer Yeates.





W.R. 0–6–0 Pannier Tanks 8400, 8402 and 8404 banking a Cardiff–Newcastle express on Lickey Incline. Photograph: P. J. Lynch.

Ex-Caledonian Railway 0–4–4 Tank 55260 at Beattock. One of the class used for banking duties. M.G.Martin took the photograph.

rough, cold work on the exposed footplate of the old 2–4–0s!

Another aspect of banking engine operation, although not so spectacular as that in wild country, is the assisting of trains out of city terminal stations where a steep gradient faces them at the start of the journey.

London Euston is a case in point, where the climb to Camden begins a short way out of the station, and the engine which has brought in the empty stock often gives the train engine a good push at the start of the journey.

All kinds of engines have been used on the Euston stock workings, ranging from the ancient and cabless 0–6–0 "Special" Saddle Tanks, through various passenger tender and tank engines, and 0–6–0 freight engines from the Midland and L.N.W. railways in latter L.M.S., and early B.R. days.

The L.N.W. 0–6–0s were the famous "Cauliflowers", which were the last engines to bring the old L.N.W. atmosphere to Euston, except for an occasional "Super D" 0–8–0 on a train of vans. The "Cauliflowers" have all gone, and the inevitable 2–6–4 Tanks are now mostly employed, although giving way to diesel power.

A similar procedure is followed at Liverpool, Lime Street, where L.M.S. 0–6–0 Tank Standard Shunters perform most of the empty stock work. Until a few years ago the ex-L.N.W.R. 0–6–2 "Coal" Tanks were used, and these always put up a good show. The driver would be leaning out of the cab watching for the guard to signal the start, and as soon as the train began to move, he would push the regulator open and with a mighty puffing the old "Coal" Tank would give the train engine a good push to the platform end, or even well beyond. This used to mystify many people who were seeing friends off, as they thought that the "little engine" went all the way to London!

Assisting coal trains

The biggest and most powerful locomotive in Great Britain was for many years the 6-cylinder Beyer-Garratt 2–8–0; 0–8–2 built for the London and North Eastern Railway in 1925. This engine was employed for most of its life assisting coal trains over the steep Worsborough Bank between Wath and Penistone, in Yorkshire. In early British Railways days, when electrification of the Manchester–Sheffield–Wath lines was in progress, the Garratt was transferred to the Lickey Incline, the domain of the previously mentioned 0–10–0. It underwent trials, but was apparently unsuited to the work there, and returned to its own ground in due course.

The 2–8–0 locomotives of Great Central, and W.D. "Austerity" types, two together on the rear of a train, were employed on Worsborough Bank as well as the Garratt. Eventually, electric locomotives began to take over the train workings and for a short time it was possible to see an electrically-hauled train piloted by a steam locomotive. Steam power vanished completely from the Wath branch early in 1952 and the Beyer-Garratt was broken up.

Folkestone Harbour branch

On the Southern Region the Folkestone Harbour branch was famous as being the haunt of the ancient Stirling 0–6–0 Tanks of class R1 which banked, as well as hauled, Boat Trains from the Harbour to the Junction. After a very long life they have recently given way to 0–6–0 Pannier Tank engines of G.W.R. design. Electrification will bring about the end of this operation also.

Another Southern scene of banking activity is the steep section in tunnel between St. David's Station and Central Station, Exeter. Pairs of 0–6–2 tank engines rebuilt from former London, Brighton and South Coast 0–6–0 tanks were employed for many years. Today, 0–8–0 tank engines of Class Z, displaced from the London area, are employed on this section. The gradient is 1 in 27 and it begins in the station at St. David's, terminating at the entrance to Central, formerly known as Queen Street. The distance is approximately half a mile. Some trains, however, tackle the climb unaided.

One more West Country scene of banking activity is the Whiteball incline on the Western Region. Here the gradient, ranging from 1 in 80 to 1 in 90, finishes in a tunnel which is 1,088 yards in length. The work is performed by 2–6–2 tank locomotives.

Use bound to decline

Today the Diesels are taking over the heaviest expresses and bankers do not always push in the rear, but they are sometimes needed, even with such modern power available. We will probably see a Diesel banking a Diesel in some circumstances as happens in the U.S.A., but the employment of assisting engines is bound to decline with the spread of electric and Diesel traction, and thus one more aspect of old time railway operation will be reduced or may even completely disappear. This will not happen for some time yet, however, and we can still go to our favourite inclines and view the impressive spectacle which is always afforded by hard-working steam locomotives, making the most of it while opportunity still allows.

In the Land of the Ancient Turks

In the March issue of the Meccano Magazine *Bruce Moorsom, of Glamorgan, described how, in June of last year, a band of young explorers from Cambridge set out on the first stage of their expedition to follow the route, from Regensburg in Germany to Jerusalem in Jordan, which the first Crusaders took to the Holy Land, and to carry out research on Armenian Crusader castles.*

In his first instalment, you will remember, Mr. Moorsom described how the party, equipped with two Commer vans, a motor-cycle, food and camping gear and a considerable amount of equipment including cameras, tape recorders and scientific instruments, travelled across France and Germany into Austria and from there through Hungary, Yugoslavia and Bulgaria into Turkish territory. On July 19 they crossed the Bosphorus into Asia and eventually travelled by way of Damascus to Jerusalem.

In this final article, Mr. Moorsom briefly describes how the modern explorers carried out the second part of their programme.

The view across the plains from Kozan Castle.

EIGHT hundred and sixty-five years ago, on November 26, 1095, the First Crusade began. On that day, addressing himself to a vast crowd of

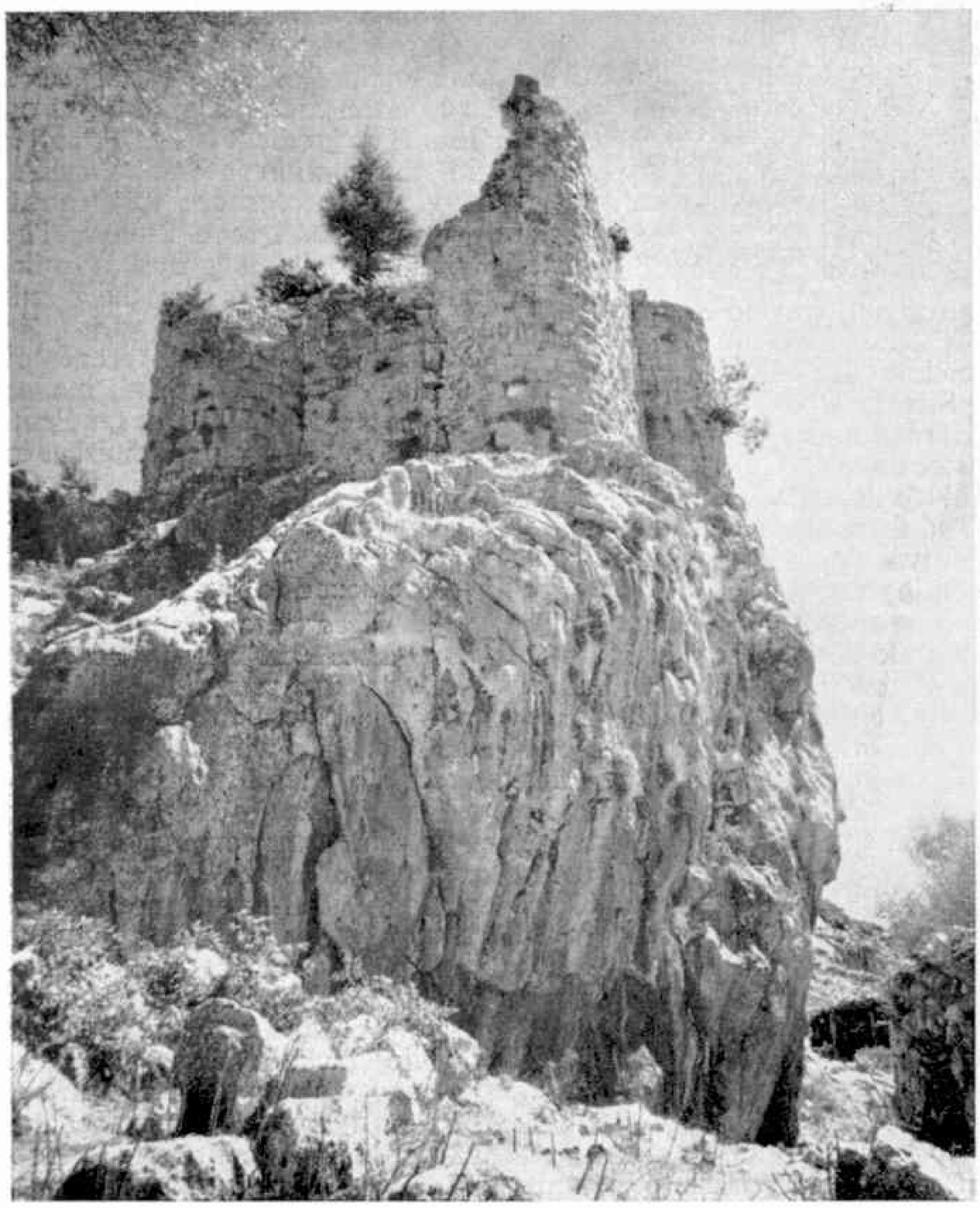
By BRUCE MOORSOM

Franks who were gathered together in a field outside the town of Clermont, in France, Pope Urban II begged these "descendants of unconquered fathers" to take up arms to "humble the hairy scalp" of those who opposed them, and to rescue the Holy Places from the hands of the Seljuk Turks.

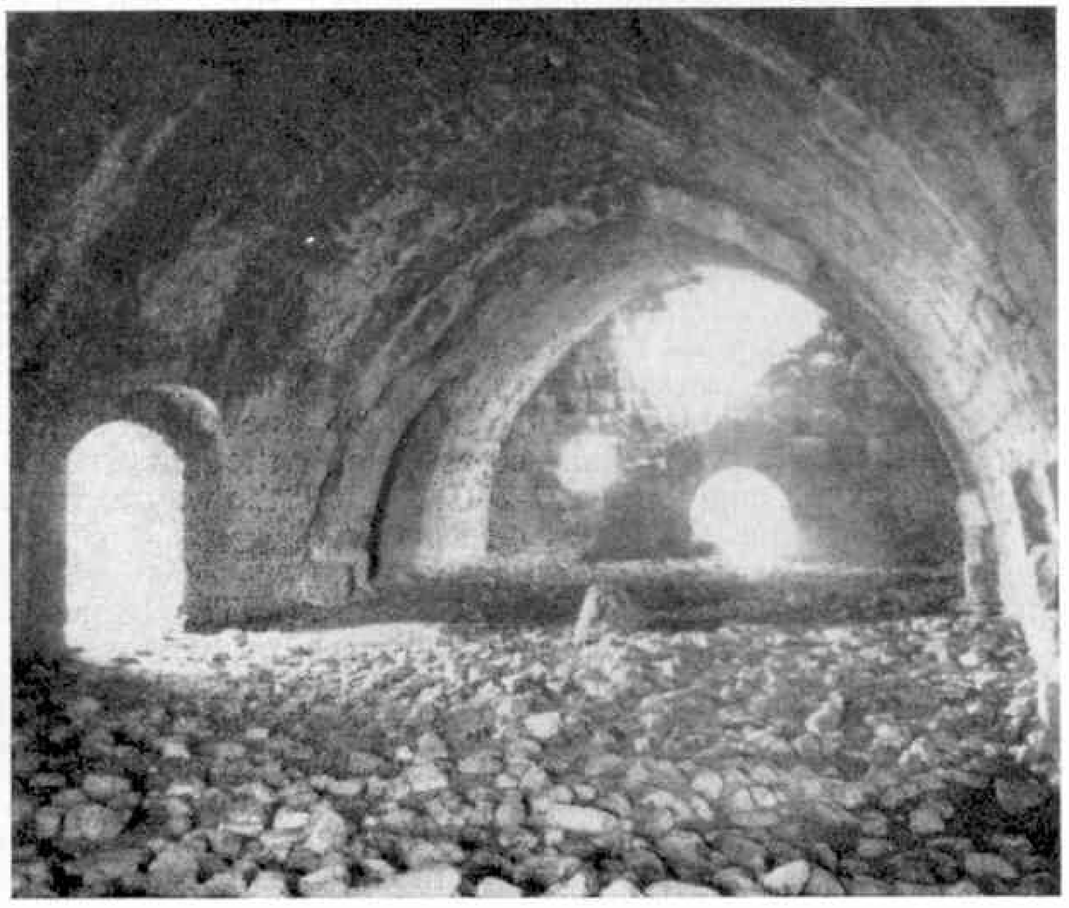
Thus began the Crusaders' campaigns against the Turks which were to extend over many, many years. In the course of these bitter years hundreds of men rode or tramped over the vast mountains and ranges of South-East Turkey, sometimes filled with the high spirit of endeavour after a thrilling victory, sometimes utterly dejected after defeat. A great part of the struggle was the establishment of the Crusaders' fortresses, and the investigation of the remains of many of these fortresses was one of the principal objects of the Cambridge Middle East Expedition.

Our first aim, that of following the route of the First Crusade as far as the Holy Land, had been successfully completed and so it was that on August 7 we motored towards Turkey to fulfil the second part of the ambitious programme we had planned. We were to spend a month in South-Eastern Turkey surveying some of the Crusader castles in the area of Kozan.

Kozan lies at the southern end of a group of passes leading from the Taurus valleys to the Silician Plain. Adana, the district's capital, is 45 miles to the south,



The impressive ruins of Belmece Castle on their towering cliff, (left) and (right) a view of the interior of the same castle.



The vans of the expedition pictured on their travels across Southern Turkey.

and to the north are the Taurus Mountains, impenetrable in winter, cool and inhabited in summer.

The village is dominated by its castle which stands, lofty and ruined, a massive, sprawling structure that serves as a formidable reminder of a turbulent past and as a grazing ground for bell-ringing mountain goats. This village was to serve as our base for the following month and, from here we planned the searches for the Crusader castles.

We spent our first three days inquiring about these ancient fortresses. Unlike the English, the Turks are not interested in their historical heritage, and they gave completely misleading information about their castles. We were told of castles built in the time of Christ, of castles where elephants and tigers roamed, and of one where men in armour still guarded the gates against intruders. However, after three days, we had sifted enough truth from these fantasies, and were able to make plans to survey these structures.

Payment in advance

Our search actually began on August 13. Leaving our base in Kozan at four in the morning, we drove west towards Kara-Sis Castle. Our guide told us there were elephants inside the castle walls that resented intruders and usually made a meal of them. He would, therefore, take us within sight of the walls and then leave us to it. He asked to be paid in advance, for he was certain we would never come down again.

After a spine-breaking fifteen minutes drive across country we reached a small village, and here we left our vehicle in the shade of a tree. It was impossible to use the van beyond that point and so the next part of the journey was made on donkeys. Our interpreter sought out the village head man, and procured six of these beasts for the equivalent of ten shillings each for the day.

Two donkeys were loaded with all our heavy equipment—film cameras, theodolites, drawing boards, and water—and the four of us mounted the remaining donkeys. For the next three hours we followed the guide, climbing higher and higher until the village was merely a speck in the distance. It was only 7.30 in the morning but the sun was already extremely hot. We had still not seen the castle, but were repeatedly assured that it was not far away.

Ten minutes later the guide stopped and we dismounted. The rocks here were so steep and sharp that the donkeys could climb no higher, and the rest of the journey had to be completed on foot.

Some of the arches which still stand in the Castle of the Gates.

The equipment was unloaded and we set out again. There followed two hours of tortuous climbing under a blazing sun. Then, for the first time, we saw the castle, perched on the top of the mountain 300 feet above us. The guide and the interpreter refused to come any further so we climbed alone, stumbling, falling and sweating our way to the top. Part of the wall had crumbled, so we climbed inside the castle.

Although there did not seem to be any elephants in residence, two of us toured the ruins at once, just to make sure. In the end we found one—but it was carved in stone, decorating the top of a door. This, I imagine, explained the legend about the old castle.

The surveying equipment was brought in and set up. All day we measured lengths and widths, heights and depths, thicknesses and angles. We photographed the carvings and the stonework and by five in the evening Richard Ortiger had produced a ground plan of the castle, the first ever made. We collected the equipment and began the descent; we found the donkeys and rode towards the village, collected the van and arrived back in Kozan at ten that evening, dusty, tired, but pleased with the day's work.

Lofty outposts

During our month in South-Eastern Turkey we visited many such Crusader castles. Hewn in the twelfth century, these structures were almost always to be found in the mountains, perched on top of an upthrust, enjoying a panoramic view of the surrounding territory.

From these lofty outposts the soldiers could detect an army several days away by seeing the dust thrown up in the plain. They therefore had time to prepare for an attack.

In the time available to us we visited Ilan Castle, Tilhamdun, (*Cont. on p. 189*)

COMET'S MIDDLE EAST CONQUEST

A FEW weeks ago I was lucky enough to be invited to travel to Lebanon on the delivery flight of one of the de Havilland Comet 4C jet-liners of Middle East Airlines. On the flight deck were Captain R. W. Hornall, the company's chief pilot, and Group Captain John Cunningham, de Havilland's famous chief test pilot, so I need hardly tell you that it was the fastest and most comfortable flight I have ever made.

We took just 4 hours 50 minutes to cover the 2,300 miles from London to Beirut, and in armchair luxury, six miles up, we were able to enjoy both a wonderful lunch and equally wonderful views of France, Italy, Greece, Rhodes and Cyprus.

There is no room here to describe all the exciting places I was able to visit in the following six days. They included Byblos, home of the alphabet, and the mighty Roman ruins at Baalbek, in Lebanon. Then, after a 54-minute hop by Viscount to Jerusalem, came a tour of that lovely city and nearby Bethlehem, Jericho and the Dead Sea.

Now that the Comet has brought Lebanon and Jordan within so few hours' travelling time of London, it seems certain that more and more people will decide to try a Middle East holiday. A big advantage is that if you tire of history, you can go skiing and swimming on the same day, as there are mountains and fine beaches very close to Beirut.

M.E.A.'s choice of the Comet for their long-range services was no accident. It is not too big or too expensive for them and it will land almost anywhere, on airports that are far too small for the big U.S. jet-liners. In fact, the Comet seems to have captured the majority of the Middle East market for Britain. Present orders from M.E.A. for four, and United Arab Airways for five, are likely to be followed soon by new orders from Iraq and Saudi-Arabia and a re-order from M.E.A. In addition, the Sultan of Kuwait is considering the purchase of a personal Comet, which would be the fastest, biggest and most luxurious executive transport in the world.

AIR NEWS

By

John W. R. Taylor

500 FOR THE PRICE OF ONE

The Comet in which I flew out to Beirut cost more than £1,000,000. This might seem a lot of money for an aeroplane, but it is less than half the price of a Boeing 707 or Douglas DC–8, and B.O.A.C.'s ten Vickers Super VC10s are going to cost £25,000,000.

That the airlines can afford such astronomical sums results, of course, from the fact that well over 100 million people a year fly on scheduled services nowadays. But how much do you think the earliest British airlines could afford to pay for their aeroplanes 40 years ago?

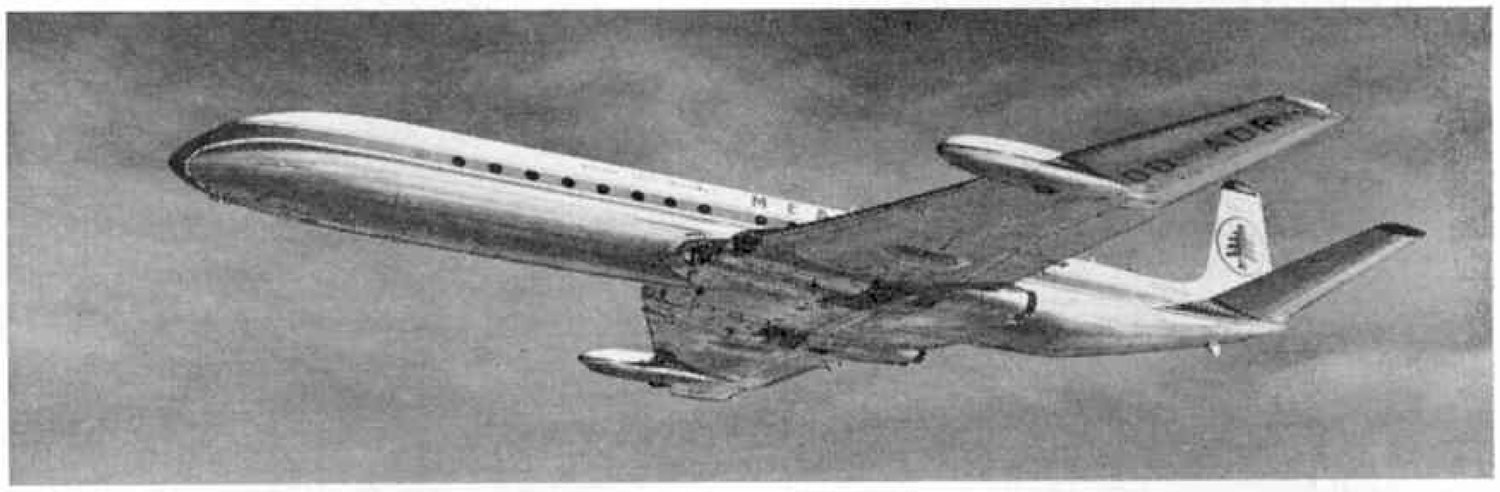
Figures compiled by Mr. Peter Murray, General Secretary of the Society of Licensed Aircraft Engineers, show that it was possible to buy a D.H.4A in 1919 for £2,150—1/500th of the cost of a D.H. Comet of today. The twin-engined H.P. 0/700 used by Handley Page Transport at about the same time was quite expensive at £7,460.

Probably the greatest bargains in airline history were the eight Handley Page H.P.42 "Hannibals" bought by Imperial Airways in 1930 for £28,930 each. These magnificent old biplanes remained in service for ten years and flew about 10,000,000 miles without ever hurting a passenger until the last of them disappeared on a wartime flight. In view of this record, it is sad to learn that the makers had to suffer a deduction of £20,475 for late delivery!

A PRIVATE AIRSHIP

One of the most unusual privately-owned aircraft in the world is the non-rigid airship *Mayflower II*, operated by the American Goodyear Tire & Rubber Company for advertising and public relations purposes.

Famous as the makers of all the military airships used by the U.S. Navy for anti-submarine and early-warning radar duties,



The de Havilland Comet 4C jet air-liner (top picture) can carry up to 102 passengers at a cruising speed of 500 m.p.h. (Below) Carrying the insignia of Air France this Caravelle is now part of the attractions at the miniature town of Madurodam.

The Goodyear Mayflower II is shown (top) before a shakedown cruise from Akron Municipal Airport. Picture by courtesy of Goodyear News Service. The lower illustration shows the Currie Wot single-seat biplane.

Goodyear have themselves operated a succession of thirteen small blimps since 1928. All have been named after yachts that defended the America Cup against challengers from Britain.

Mayflower II is 150 feet long, 41 feet in diameter and contains 132,000 cubic feet of helium. Her control car is 23 feet long and eight feet high, with seats for a pilot and six passengers. Two 175 h.p. Continental GO–300A engines give a top speed of 57 m.p.h. and maximum range of 650 miles at 33 m.p.h. This may not seem very fast, but don't forget that an airship combines the helicopter's ability to take off and land vertically with extremely low operating costs.

JET-LINER AT MADURODAM

Not far from The Hague, capital of the Netherlands, is Madurodam, the "smallest town in the world", visited every year by many thousands of tourists. The heart of this miniature town, where time seems to have stood still, is modelled in the style of the ancient Dutch cities. But the suburbs are up-to-date, with modern shops, roads, railway station and sea port.

There is even an airport, and a very important event took place there towards the end of 1960, with the arrival of the first jet-liner. It was a Caravelle in the insignia of Air France, and it is still there, as can be seen in the bottom photograph on the previous page.

HIPPO LIFT

Addo Park, near Port Elizabeth in South Africa, has been without hippos for a century, and it is planned to remedy this sad state of affairs by flying six young hippos to Addo from the Kruger National Park in the Transvaal. Caesar's Dam, where they will be given a home, has been fenced with steel cables and old tram-rails to discourage any ambition the animals might have to visit town.

Unfortunately, one or two other problems have arisen. A young hippo can weigh anything up to a ton; so the airline has decided it will be safer to give the animals a "tranquilliser" before taking them on their first flight. The main snag seems to be to get them to the aircraft. Up to the time this story reached me, National Park officials had had no luck in catching the hippos!

ECLIPSE CLOSE-UP

Forty-four members of the Swiss Astronomical Society chartered a Swissair Convair-liner, on the morning of February 15, so that they could fly from Zurich to the region of Pisa, in Italy, to get a better view of the eclipse of the sun which took place that day.

In its total form, the eclipse could be seen all the way from the south of France, across Italy to Eastern Europe; but the best viewing point was on the centre-line of the eclipse, passing through Pisa, from where the sun's corona was visible. By taking an aerial front seat, the Swiss astronomers were able to avoid bad weather areas and reach altitudes from which good, clear photographs could be taken. This was important, since the next total eclipse of the sun in Europe will not take place until 1999.

AFLOAT AFTER FLIGHT

For many years visitors to Holland's main international airport of Schiphol, Amsterdam, have been startled by the sight of boats sailing past above them. The reason is that Schiphol is below the level of the Ringvaart Canal that runs in front of its main entrance.

The proximity of the canal gave K.L.M. a bright idea last year. They decided that many visitors might like to spend a holiday afloat in Holland and so they organised a "hire a boat" service of cabin cruisers and yachts. Tourists were able to step almost straight from their airliners into the boats, and the service proved so popular that it is being operated on a much greater scale this year.

TURBOPROP FOR ONE

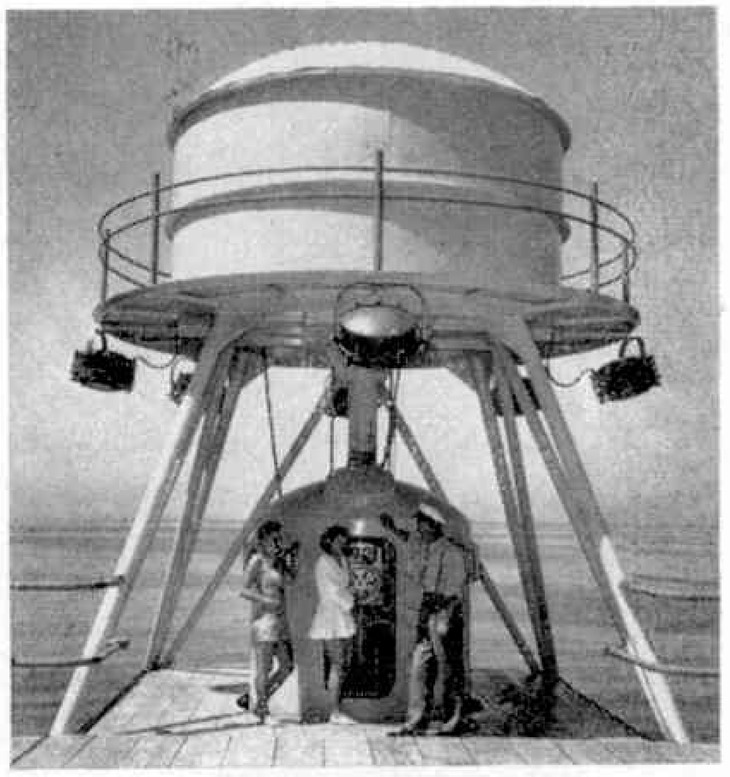
Although the little Currie Wot single-seat biplane illustrated on this page looks quite an ordinary lightplane it is, in fact, powered by a turboprop engine.

Its flight testing marks the re-appearance in the aero-engine field of the Rover Company, who were associated with Sir Frank Whittle in the development of the earliest British jet-engines. In recent years they have been more concerned with producing small shaft-turbines for use in ships and firefighting appliances, and as auxiliary power units for aircraft. But their 60 and 90 h.p. industrial engines are so light in weight, free of vibration, cheap to run and easy to maintain that they seemed to offer the perfect basis for a series of turboprop engines for light aircraft. The results are the 60 h.p. TP/60, fitted in the Wot, and the 90 h.p. TP/90, which are to be followed soon by a 140 h.p. model.

These units can be used to re-engine existing lightplanes, but their main application will doubtless be in the new range of private and business aircraft now under development in Britain.

Close-Up Views Of Underwater Life

THEATRES OF THE DEEP



The diving bell at Avalon through which the sea bed can be viewed.

HAVE you ever wondered how those underwater shots of sharks and other predatory fish which you see at the cinema and on TV are taken? Of course, some are filmed by daredevil divers using aqualungs, but the majority are taken without the photographers so much as getting their feet wet. Even an amateur film-maker living in the United States can take shots just as good, and in perfect safety, by visiting any one of the several oceanariums open to the general public.

The most famous of all the oceanariums is at Marineland, in Florida. It is a huge concrete tank entirely surrounded by large plate glass windows. All kinds of fish, large and small, swim around freely inside. By pointing a camera through the plate glass window it is possible to shoot pictures which are indistinguishable from those taken on the ocean bed.

* * * *

An oceanarium is rather like an underwater zoological garden, and feeding time is just as important there as at any ordinary zoo. Every few hours a diver goes down carrying food in a large wire basket. The fish are so tame they will come and eat out of his hand. It is very important that they should be fed regularly. Particularly is this so in the case of the sharks, for if they are not given a good supply of food, they are rather apt to gobble up the other fish in the tank. Most popular denizens of the oceanarium are the porpoises. They respond to years of patient and kindly training by leaping clear of the water to take fish from the trainer's hand.

By HARRY McDOUGALL

The Marineland oceanarium was originally built as a sort of deep sea research laboratory so that scientists could study underwater life under ideal conditions. However, the public flocked to see this unique view of underwater life and so another one was opened at Miami. Both are now very popular tourist attractions.

Yet another oceanarium has been built in California and this one even has baby whales. All the fish seem to thrive in captivity, probably because of the large amount of space available in the oceanariums. However, for people who want to see underwater life in its truly natural state, there are several places, particularly in Florida, where visitors can ride in a "submarine boat". This is not really a submarine at all but an ordinary boat with a well set into the bottom of the hull. The well has circular portholes along each side, several feet below the surface, and through these passengers can see the fish swimming in the freshwater springs where the submarine boat is operated.

Because the fish know they will not be harmed, they have gradually become very tame. When a few pieces of bread are thrown overboard from the boat they swim eagerly up to the windows, where they can be photographed.

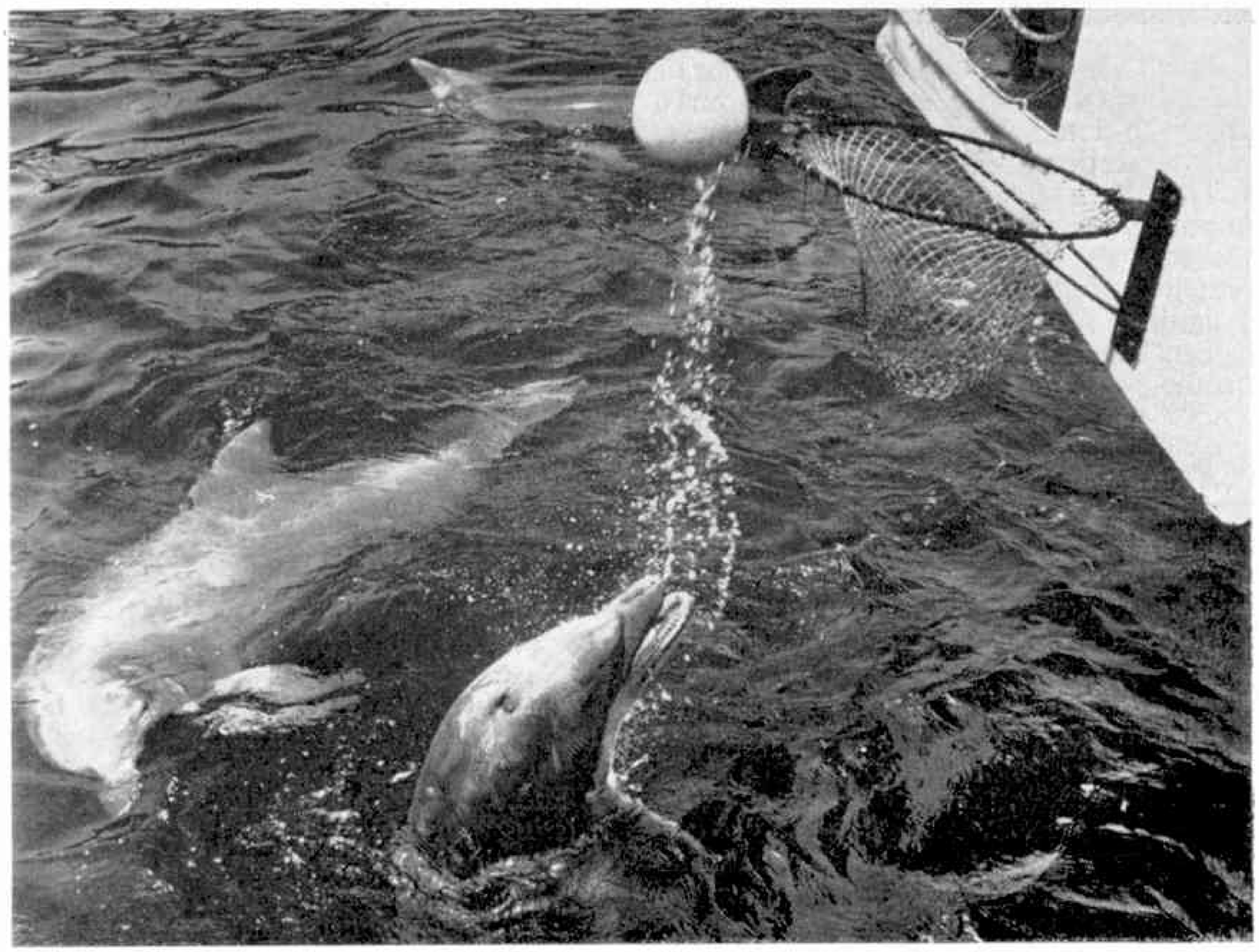
There is one place where it is also possible for tourists actually to visit the ocean bed. That is Avalon, on the island of Santa Catalina, just off the coast of California. There, at the end of a long jetty, a diving bell has been built. Seven or eight people can be accommodated, and when they are all inside, the door clangs shut and the diving bell is drawn down to the bottom of the ocean. In perfect silence the passengers are able to look through the circular windows at a rather eerie scene, for at that depth the water is dark and seaweed sways mysteriously in the ocean currents. As with the submarine boats, fish readily swim up to the windows of the diving bell to gaze curiously at the visitors from the surface.

* * * *

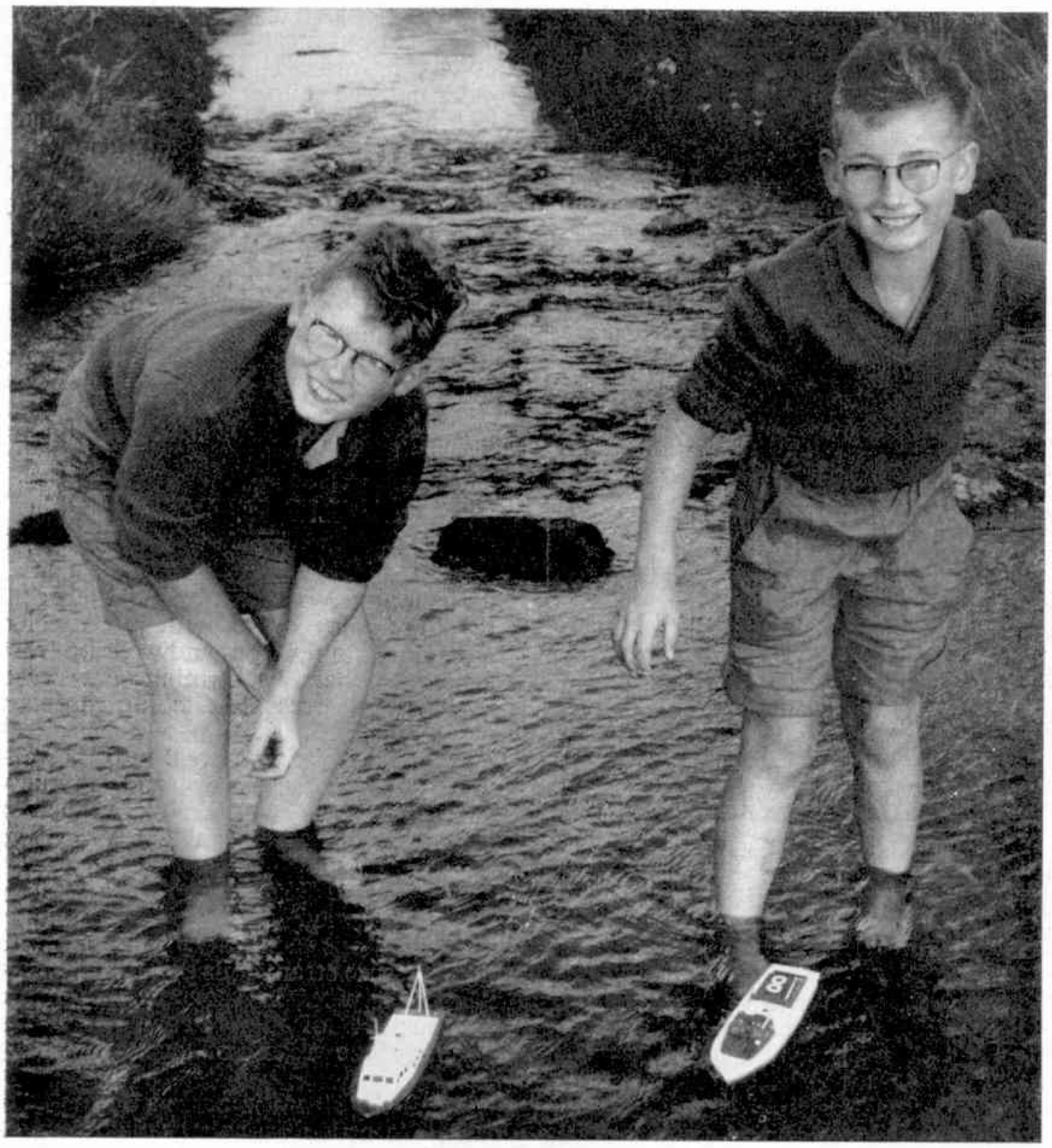
Although viewing underwater life is always very interesting, perhaps the most enjoyable experience of all is a visit to the underwater theatre at Weeki Wachee. This is a huge steel tank which has been set in the floor of one of Florida's fresh water springs. It has comfortable seating arrangements and is not unlike a small theatre.

The audience watch through plate glass windows as a complete underwater ballet is staged by girls who dive down to the bottom of the freshwater springs, trailing long hoses with them. Air is pumped down from the surface through the hoses and the girls never (*Cont. on page 188*)

Porpoises are seen here playing basketball at the Marineland oceanarium.



FUN WITH HORNBY SPEED BOATS



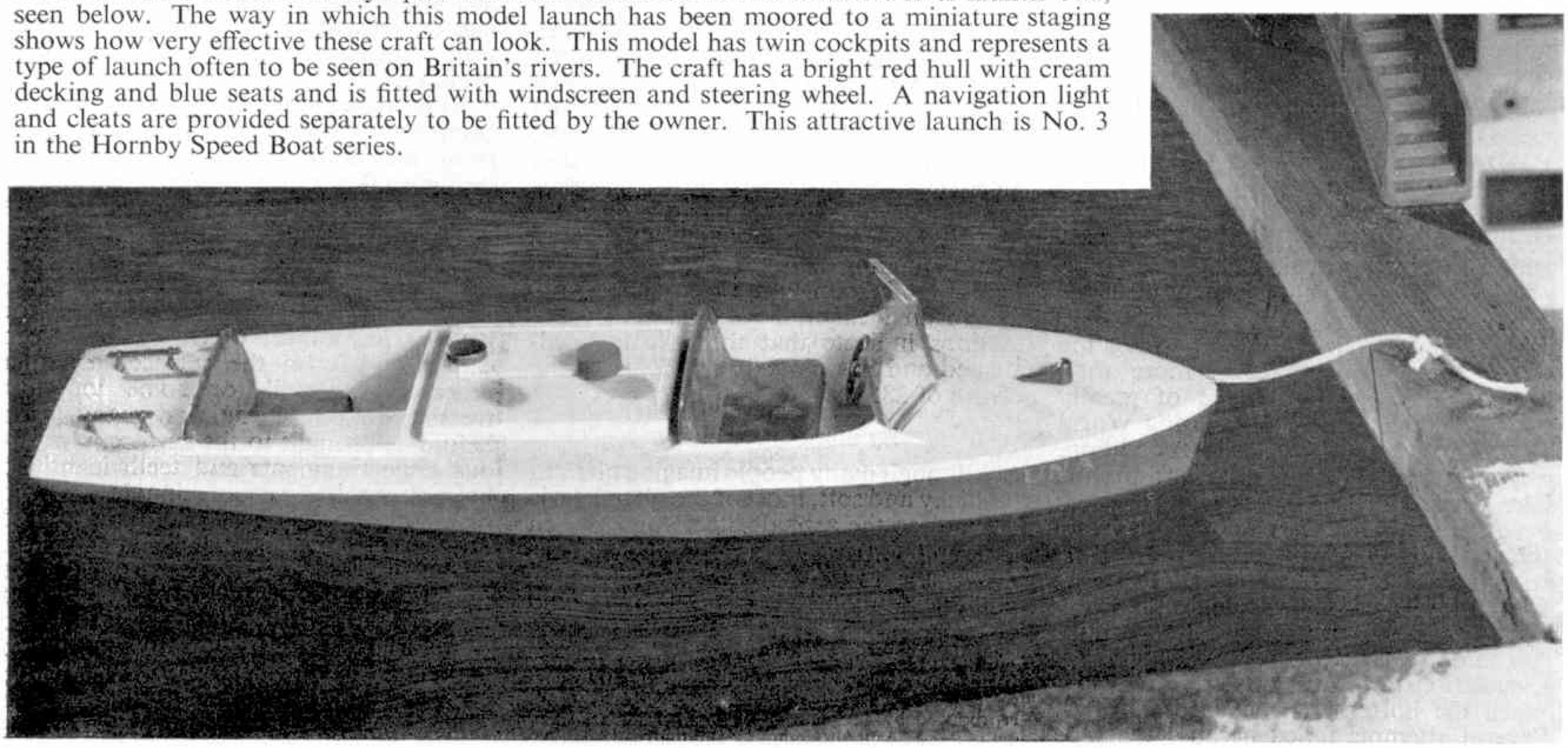
HORNBY Speed Boats, reintroduced last summer for the first time since before the war, are appearing again in their hundreds on ponds and in streams all over Britain. These fine launches, with moulded superstructures, have separate fittings such as masts, lifebelts, handrails, etc., and are fitted with powerful clockwork motors.

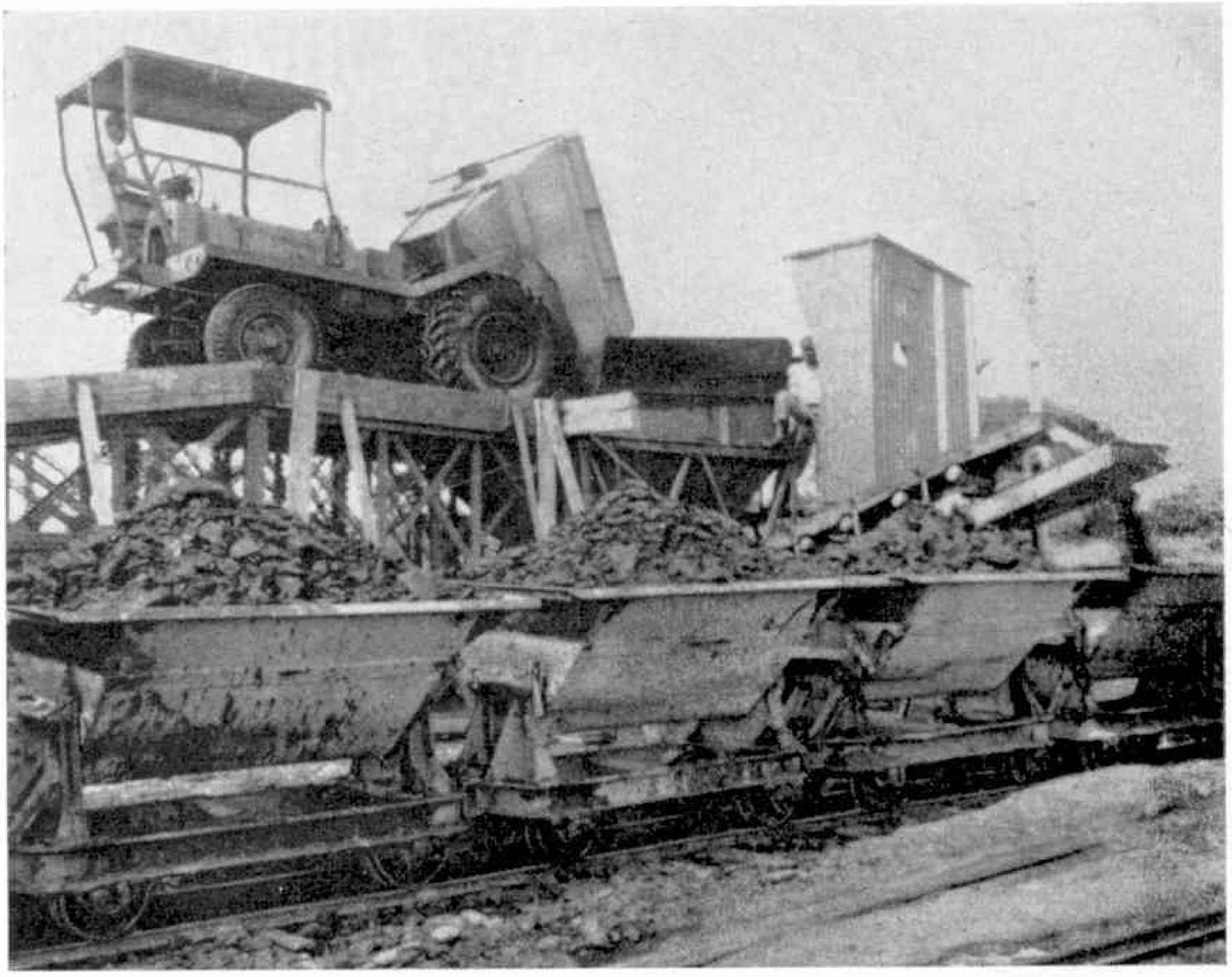
In the picture on the left you see Martyn and Mervyn Pendlebury, of Exeter, enjoying themselves with two models from the Hornby Speed Boat range. They are sailing the R.A.F. Range Safety Launch and the PL1 Fast Patrol Boat, and you can see how much they are enjoying themselves. The picture was taken by their father Mr. C. Howard Pendlebury, B.Sc., as the boys were paddling in the Walla Brook near Gidleigh, on Dartmoor.

"You may be interested to know" writes Mr. Pendlebury, "that although the current in this brook, which is really a small river, is quite strong, the boats could easily hold their own and sail upstream against the flow."

An interesting new item—particularly useful to those who always lose their keys—is the new Hornby key buoy. In the gay red and yellow Meccano colours the buoy has a spare key attached to it and comes complete in a polythene bag. If you lose your key in the pond whilst sailing the boat, the buoy not only keeps it afloat but gives a clear indication of its position.

Latest in the line of Hornby Speed Boats to be released is the attractive river launch *Una*, seen below. The way in which this model launch has been moored to a miniature staging shows how very effective these craft can look. This model has twin cockpits and represents a type of launch often to be seen on Britain's rivers. The craft has a bright red hull with cream decking and blue seats and is fitted with windscreen and steering wheel. A navigation light and cleats are provided separately to be fitted by the owner. This attractive launch is No. 3 in the Hornby Speed Boat series.





The Amazing Story Of A Tropical Phenomenon

ROADS—FROM A LAKE

ONE of Nature's strangest creations is the Asphalt Lake in tropical Trinidad. Popularly known as Pitch Lake, it has supplied, during the past 100 years or so, millions of tons of asphalt which has surfaced many of the roads of the world. Yet, for all this, the quantity of the asphalt in the lake shows no visible signs of diminishing. It is a vast and almost inexhaustible storehouse of wealth.

Trinidad Lake asphalt was used in the U.S.A. more than 80 years ago as a road-surfacing material. In some parts of the world there are surfacings more than 50 years old, and, in spite of greatly increased traffic, especially during World War II, they are still in excellent condition.

The greyish-black mass that forms the lake lies at the highest part of La Brea Point, about threequarters of a mile from the sea and about 140 feet above it. It is roughly circular in shape—about 1,700 feet in diameter—and the deposit actually being worked consists of about 75 acres.

The depth of the lake was a matter of speculation until attempts were made to reach the bottom by means of borings. Several attempts failed because the pipe or casing used was carried so far from the vertical at a depth of about 150 feet, by the motion of the asphalt, that further operations were abandoned. However, in 1925 a new method was tried using a movable derrick of the oil well type. A three-inch pipe, with the lower end closed by a wooden plug, was lowered into the asphalt with a one-inch steam line inserted to carry steam to the bottom of the pipe. As the asphalt was melted the pipe sank, aided by rotation from the derrick platform, and additional lengths were added until the bottom of the lake was reached. These sounding operations were continued across the lake in two directions so as to obtain an idea of the depth. The cross sections indicate that the lake is bowl-shaped and has a maximum depth at the centre of 285 feet.

By mechanical means

Although many people imagine pitch to be sticky and soft, most of the pitch lake is as hard as the asphalt blocks into which it is refined. There are danger areas, however, towards the centre, where the pitch has a molasses-like appearance and never hardens. To walk on one of these patches would mean a horrible death for the victim, for he would be slowly sucked under until he suffocated.

Until comparatively recently mining was done entirely by employing manual labour, and every pound of asphalt had to be dug out with a pickaxe. Today, however, practically every operation is done by mechanical means. Huge ditcher machines are used for extracting the asphalt and loading it into dumper cars. These then take their load to a ramp at the side of the lake from which point a train carries the material to the refinery.

The picture at the top of the page shows railway trucks being loaded with asphalt ready for transport to the refinery. Illustrations to this article are reproduced by the courtesy of The Trinidad Lake Asphalt Company Limited.

By
LESLIE E. WELLS

The long trenches left by the ditcher fill up after a day or so with pitch which moves in from the sides and wells up from below. This hardens, forming a new crust, so that the process of ditching can start all over again.

Asphalt, on being loaded into the railway trucks, is usually wet and is honeycombed with gas cavities up to an inch or more in diameter, resembling a Gruyere cheese.

When the trucks arrive at the refinery they are emptied into huge tanks holding about 100 tons each. They are fitted with high pressure steam coils and a number of perforated pipes in the bottom for the introduction of dry steam, used for agitating the mass of asphalt during melting.

When the steam is passed through the coils, the crude asphalt gradually melts and water it contains is driven off as steam. At this stage the perforated agitation pipes are opened to assist the melting operation and keep the mineral matter, present in the asphalt, in suspension, thereby producing a uniform product.

After about four hours the operation is complete and the asphalt is drawn off from the bottom of the tank, passed through a fine screen to remove extraneous vegetable matter, and run into barrels ready for shipment.

Victims of the lake

Sometimes this limitless lake claims for its own any object that may have been carelessly left on the surface; at other times some fossil, or some long-lost treasure that had vanished many years before, is brought to the surface. Numerous bone fragments and teeth identified by paleontologists as belonging to the mammals of the Pleistocene Period (Glacial or Ice Age) have been uncovered. These fossils prove that such beasts once lived in Trinidad, and roamed the wild country in prehistoric times when the lake was in a semi-fluid state. Attempting to walk upon the surface, they were engulfed.

Frequently, fossils come to the surface. This is possible because the lake is con-

stantly shifting in waves or currents. The motion is very slow, yet anything placed on the surface will change its position from day to day.

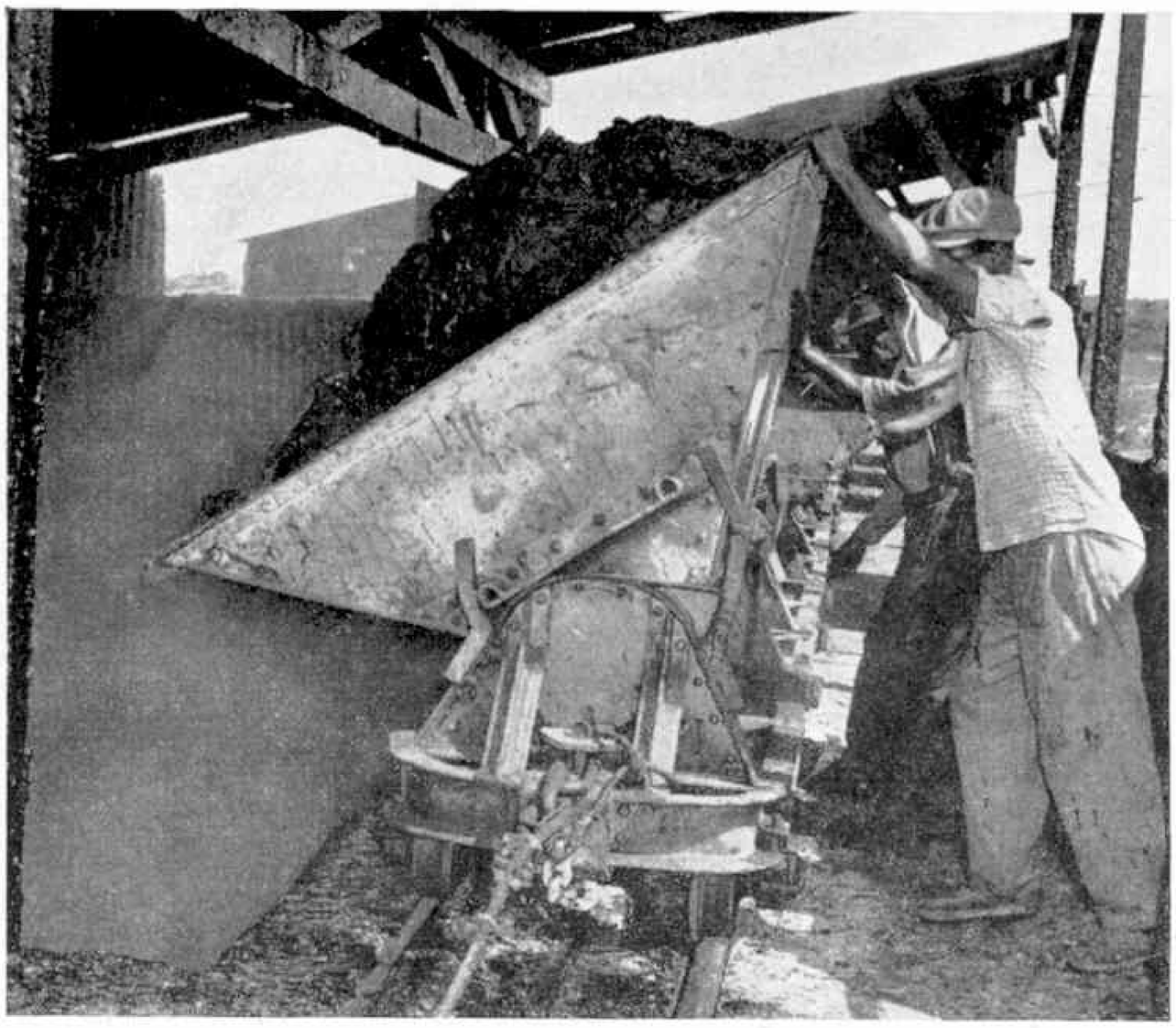
Appeared—then vanished

In view of this movement, an interesting event occurred in 1928 when a tree, believed to have been buried in the asphalt for more than 5,000 years, appeared and disappeared all within a month.

The tree came through the surface in an upright position and continued to rise until its trunk stood six feet above the surface. Workmen sawed pieces from the top for souvenirs. It continued to rise until it had reached a height of ten feet, when it began to sink back into the asphalt, and in a few days it had completely disappeared.

How did this strange lake originate? Speculations are many, but the most widely accepted theory is that it took form during a period of earth movements which resulted in numerous earth faults. This, in turn, allowed a stream of petroleum and gas to meet a stream of mud. The two united to force an outlet in the crater of an extinct volcano and gradually filled it. In time, the oils in the crater basin evaporated and left the deposit of asphalt.

Today, as road-paving material, Pitch Lake asphalt is used by nearly every country in the world and, although the demand is on the increase, the supply is not likely to give cause for alarm for many hundreds of years to come.



Asphalt being tipped into huge tanks where it is refined by having the water and gas driven off by a simple dehydration process.

Ditches that have been left by the ditcher machine. These fill up after a day or so.

An Illuminated Car Badge

Thousands of cars will be wearing a new look this summer, says the R.A.C. The cars will belong to R.A.C. members who are displaying badges from a complete new range of Club emblems now available. The new badges will also be seen on private goods vehicles, motor-cycles and scooters.

Most striking development is the first-ever illuminated badge to be offered to its members by any national motoring club. The silver-and-blue Elizabethan badge, already so well-known to motorists and two-wheeler riders, is lit by a festoon 3-watt, 12-volt lamp, connected to the side-lamp circuit.

Over three feet of wiring is supplied with the badge, together with a simple wiring diagram applicable to most present-day cars, including those several years old.

The badge, which is available from all R.A.C. Offices and Service Centres, takes only a few minutes to fit. It costs 12s. 6d.

Associate Members of the R.A.C. have the choice of the new illuminated badge, the existing Elizabethan badge or another newcomer, a de-luxe nickel-and-chromium-plated brass badge, with chromium-plated fittings, which costs 25s. Full Members of the R.A.C. also have a new badge embodying the best features of previous emblems. The other new R.A.C. badge is for private goods vehicles.

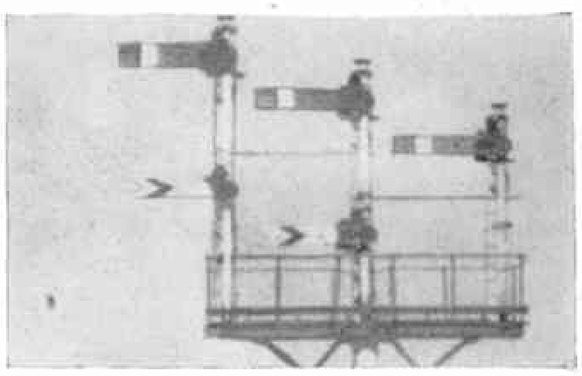
ROAD SAFETY NOTES

LONGER days, better weather . . . and hiking and biking ahead.

This is the time when everyone wants to get outside, the younger ones to play; the older ones to walk or ride. Unfortunately, so many, in their enjoyment of these pleasures, forget the ordinary, simple rules of "roadmanship"; things such as kerb drill (which is just as important to older people as to youngsters) and using the roads with consideration for other people's safety as well as one's own.

If you are going out walking in the country, where often there are no pavements, don't walk with your back to the traffic—walk on the right-hand side where you can see what's coming. Keep well in to the side, so that traffic does not have to swerve to avoid you.

When you are cycling, never ride more than two abreast and ride in single file when the road is narrow or busy. If there is a cycle track, use it. Remember it is better to be safe than sorry, and simple, commonsense precautions help so much.



RAILWAY NOTES

Contributed by R. A. H. Weight

AT CARLISLE, AND OVER THE FELLS

THE castellated Border City of Carlisle, in the Eden Valley, county town of Cumberland and an important railway and business centre for a wide area, is actually about nine miles or more south of the Scottish territorial boundary. Its station has long been famous as an important stopping place for trains on Anglo-Scottish trunk routes, often with engine-changing and attaching or detaching of carriages.

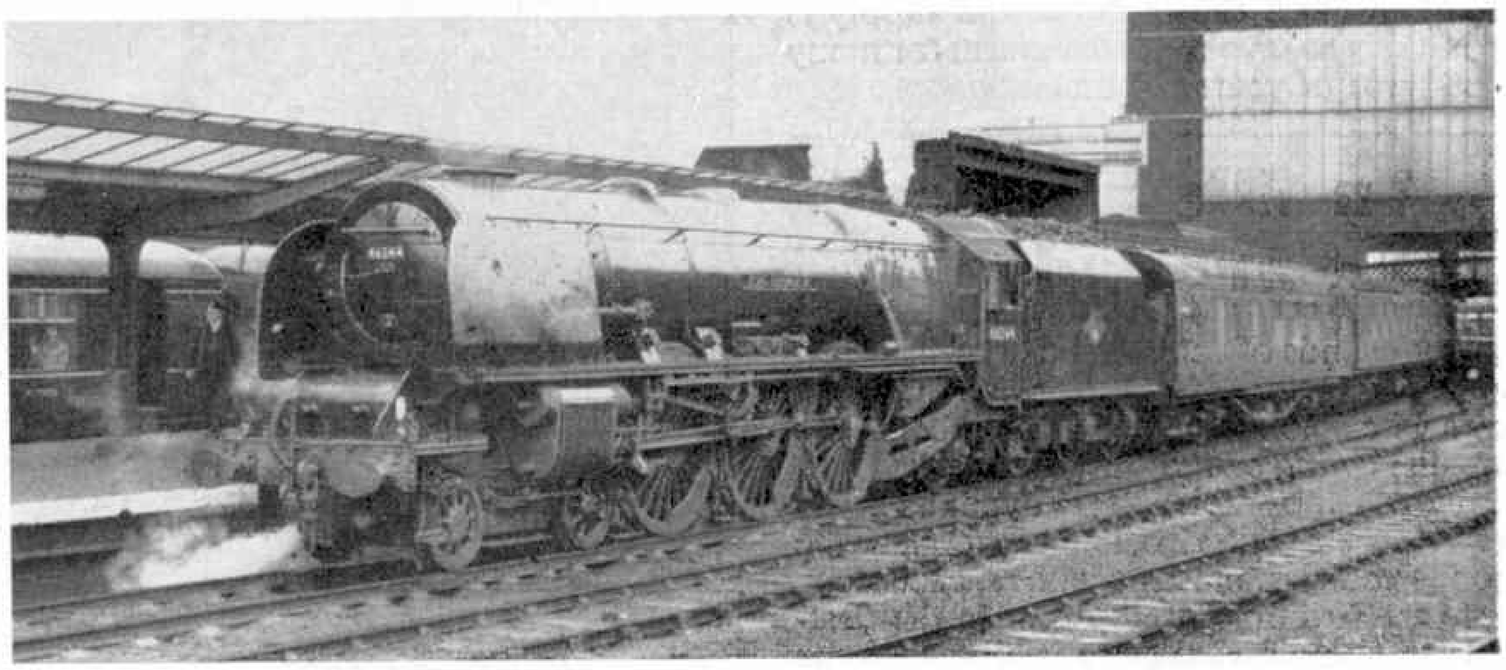
Before the formation in 1923 of the L.M.S. and L.N.E.R. groups (now succeeded by the L.M. and Scottish Regions, B.R.) seven different companies' locomotives and trains, in their different liveries, were seen there regularly, several of those railways being in direct competition with one another for long-distance traffic. So, for enthusiasts, it was a fascinating place of almost unique character, as I am able to recall.

There is still much of interest to be seen, especially during the busy mid-day, late afternoon and night periods when numerous important through expresses are dealt with to and from London (Euston or St. Pancras), Glasgow (Central or St. Enoch), Edinburgh and Perth. There are also services to and from Birmingham, Manchester and Liverpool, Leeds, etc.

For operating purposes Carlisle is the "frontier" with the Scottish Region, although there is considerable through engine running to and from Glasgow, for example. There are only three through running lines alongside long platforms, of which No. 2 is used to a considerable extent by principal trains in either direction, although it is actually on the down, or northbound, side. I watched the southbound *Royal Scot*, headed by maroon 4–6–2, *City of Manchester*, pass majestically through on that track last summer, during the period when a stop at a signal box south of the platforms was being made, for crew-changing purposes only, in the course of the 400-mile Glasgow–Euston journey.

Long-distance stopping expresses I observed on the same or the previous day included: *Thames–Clyde*, St. Pancras–Glasgow, St. Enoch, arriving five minutes early with engine No. 46117, *Welsh Guardsman*, through from Leeds (more usually it has an A3 Pacific); 10.0 a.m. Euston–Glasgow, brought in by No. 46227, *Duchess of Devonshire* and taken on by 46230, *Duchess of Buccleuch;* afternoon Perth–Euston brought in by No. 70052, *Firth of Tay*, Britannia class, relieved by Peak type diesel, No. D2, *Helvellyn;* the nightly "*Up Special T.P.O.*" from Aberdeen, Perth, Glasgow, etc. to Crewe–Euston—attaching more sorting carriages at Carlisle with considerable change and augmentation of travelling postal officials—worked through to Crewe by No. 70051, *Firth of Forth;* Car-Sleeper train Glasgow to London, Marylebone, with No. 72006 *Clan Mackenzie* in charge. The 10.15 a.m. from Glasgow, Central, was taken on for Euston on reversible line No. 2 as depicted in the illustration here by *King George VI* stationed at Carlisle. Another maroon 4–6–2 took on the Perth–London morning service. That train arrived double-headed by Jubilee No. 45716, *Swiftsure* and No. 72009, *Clan Stewart*. Several 4–6–2s and 4–6–0s went through unchanged on other expresses, including *The Caledonian* non-stop for Euston, also Birmingham or Manchester trains, making Carlisle calls. More type-4 diesel-electric locomotives have appeared at Carlisle lately.

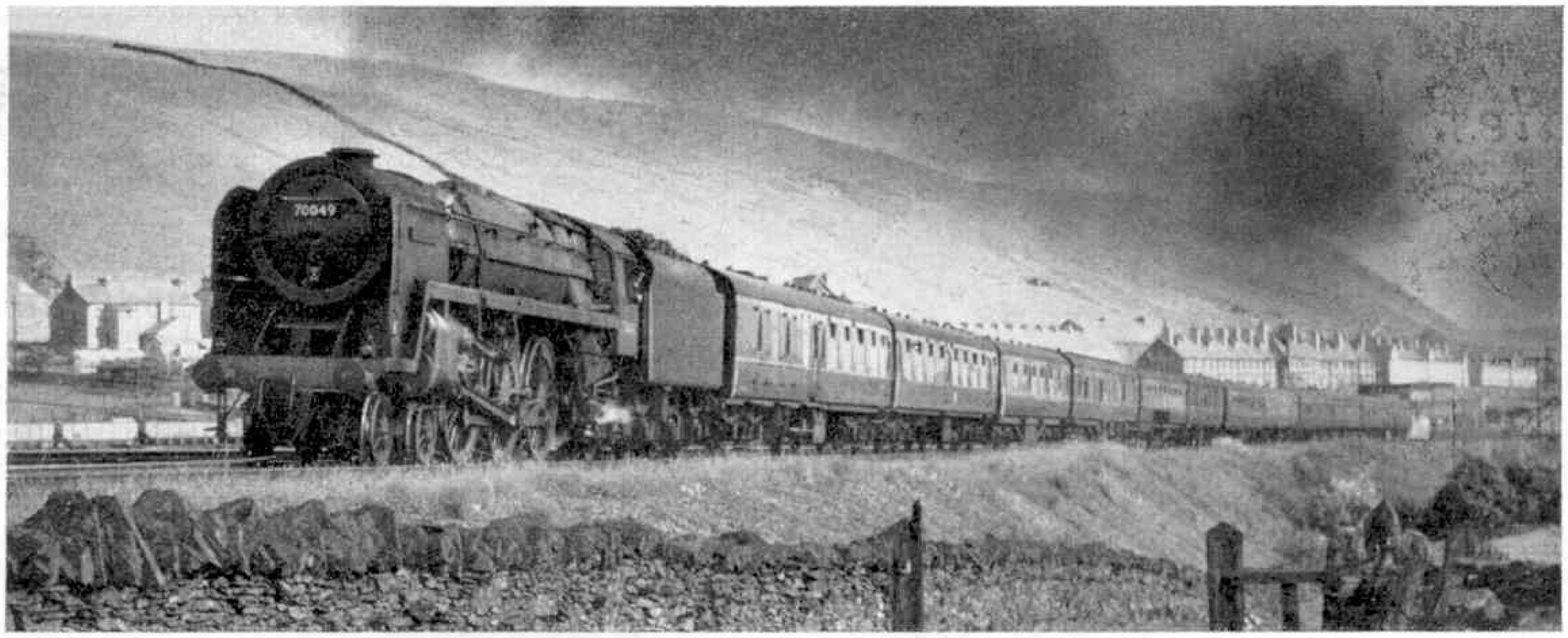
South of the station diverge the approximately 300-mile routes to London, Euston and St. Pancras respectively. Lines go off, east to Newcastle and west to Maryport–Workington, operated mainly by diesel sets. To the north the Waverley route leaves the Glasgow main lines. The last-named bifurcate again at Gretna, close to the Scottish border, for Dumfries–Kilmarnock–St. Enoch, and Glasgow Central via Carstairs (for Edinburgh, Princes Street, and Perth).



L.M.R. 4–6–2 No. 46244 "King George VI" in maroon livery ready to leave Carlisle for Euston. Photograph by the late C. A. Gostling.

Flying junctions at each end of the Carlisle Station area facilitate crossing movements without fouling other tracks. There are avoiding lines for freight traffic and, as announced not long ago, a highly-mechanised marshalling yard is under construction north of Carlisle to concentrate and speed up goods transits.

Carlisle is not much above sea level. Not far away main line trains north and south face long and severe climbs as they traverse high moorland and almost mountainous country, some of great beauty. The gradients sometimes call for assistant locomotives, according to load and type of train engine. The West Coast Scottish expresses, for example, have to go over Shap and Beattock summits,



No. 70049 "Solway Firth" beginning the climb to Shap Summit at Tebay, with a Manchester–Glasgow express. Photograph by J. E. Wilkinson.

respectively over 900 and 1,000 feet high and 81 miles apart.

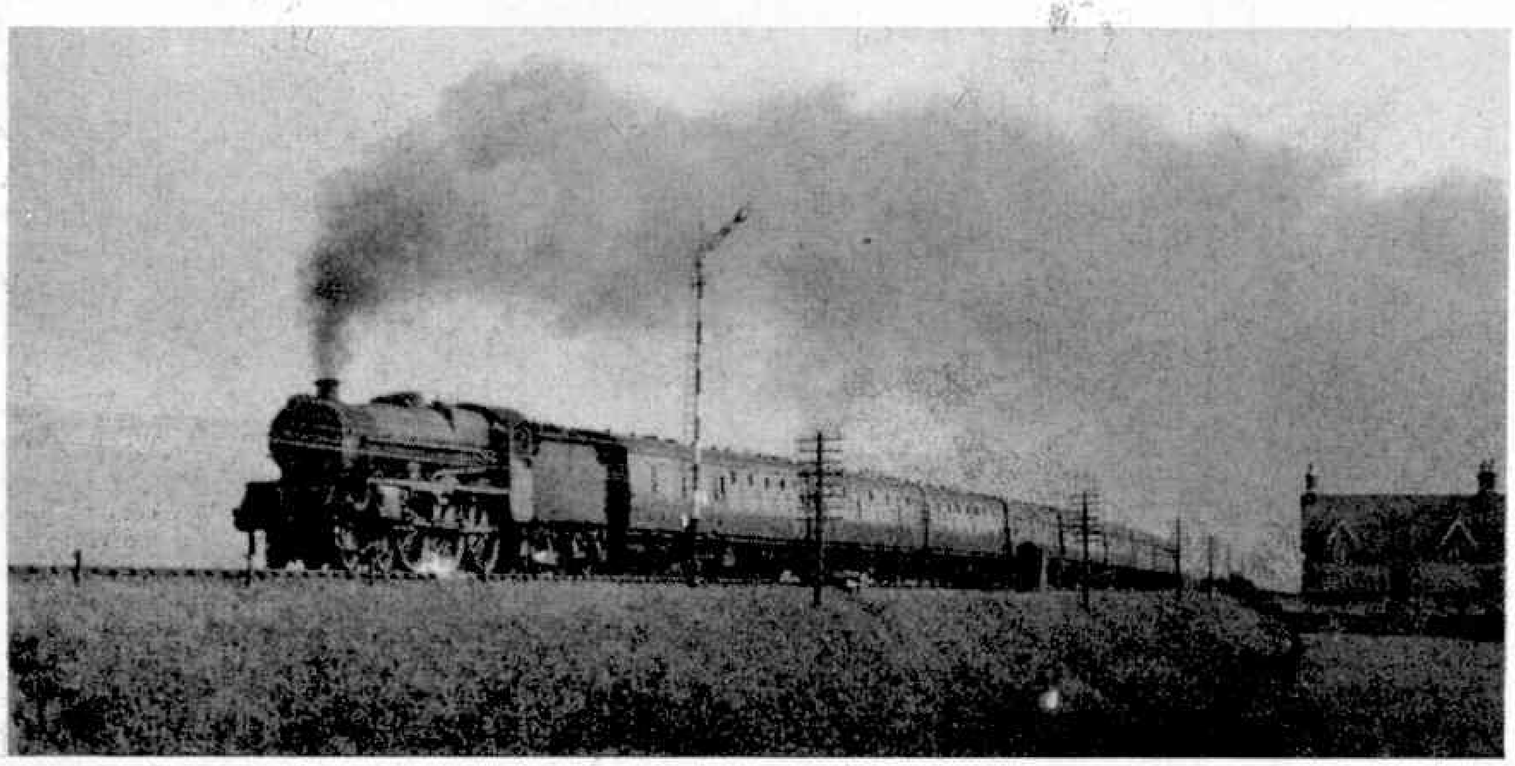
ABOARD THE "WAVERLEY"

That interesting, day-time through restaurant car train *The Waverley*, from Edinburgh to London, serves a number of important places on the way, making thirteen stops, and covers a longer and steeply-graded course in comparison with the direct East Coast route. Leaving Waverley Station soon after the one-stop *Flying Scotsman*, using for a short distance the same track, it arrives at St. Pancras (close to King's Cross, the East Coast terminus) nearly three hours later than the *Scotsman*. During the 98½ miles between Edinburgh and Carlisle over the ex-North British Railway – L.N.E.R. "Waverley route" two steep climbs through wild country have to be surmounted. On this section there are many curves and changes of gradient, and calls are made at Galashiels, Melrose, St. Boswells and Hawick. When I joined the 9-coach train, weighing 340 tons and well filled, at Carlisle, it had so far been hauled by A3 Pacific, No. 60089, *Felstead*, arriving punctually. After making connections and receiving a fresh locomotive—No. 46145, *The Duke of Wellington's Regt. (West Riding)* a Royal Scot—we left to time at 12.58 to traverse the loftiest and wildest English main line, known as the "*Settle and Carlisle*" and built by the old Midland Company. It was graphically described in the February 1960, *M.M.*, under grim winter snow-fighting conditions.

Although my trip was made in July, wet weather prevailed and some of the moorlands and peaks, 2,000 feet or more high, were enveloped in cloud. After a 70 m.p.h. maximum, a track repair slowing and call at Appleby, some fifteen miles of climbing at over 40 m.p.h. brought us to Ais Gill summit—1,166 feet above sea level—over the highest water troughs in the world and across a 10-mile bleak table-land at "mountain" level to Blea Moor Tunnel, the northbound summit at 1,138 feet. Then came a fifteen mile descent into sunshine, with much braking and speeds around 68 m.p.h. past Settle and so to the Hellifield Junction stop in North Yorkshire. Through that vast county and beyond the route is largely industrial, not much suited to fast running.

At Leeds City terminal the train reverses; Jubilee 4–6–0 No. 45597, *Barbados*, less powerful than our "Scot", came on at the other end to work to London. The splendid performance over the fastest and longest non-stop concluding run of the journey from Nottingham to St. Pancras was reported in these notes last October. Intermediately, with a more liberal schedule, there had been calls at Rotherham, Sheffield and Chesterfield, as well as a signal stop, amid almost innumerable junctions, other lines and so on.

A hardworking Jubilee 4–6–0 with "The Waverley" near Ribblehead, on the difficult Midland route to Carlisle. Photograph by W. Hubert Foster.



VAST RAILWAY CENTRE

Crewe Station, 158 miles from London, and just over half way between Euston and Carlisle, is one of the best known focal points and combined junctions in Britain. To many people, too, it appears decidedly complicated! It has need to be larger than Carlisle as its train services are more extensive; so much so that during busy periods, and on peak days—as at Carlisle and elsewhere—there are sometimes unavoidable delays outside for trains awaiting platform accommodation.

The road overbridge, entrance hall and booking offices have been rebuilt; a forest of high-voltage overhead traction cables spans the tracks; electric multiple-unit and locomotive-hauled trains come and go on the Manchester line, as part of an extending plan. There are many diesel locomotives on express and other trains as well as quite a variety of steam, if in diminishing numbers. Some work through, but others, like numerous passengers, change at Crewe.

Diesel sets operate the Derby–Stoke cross-country service, by which I arrived and departed when last visiting this vast Cheshire railway centre with its huge and famous Locomotive Works; Motive Power Depots; passenger and freight sidings and marshalling yards. There is a network of lines for miles, with external goods and transfer lines connecting various converging routes, partly by means of burrowing junctions and tunnels beneath main tracks.

From the North end, which has changed a good deal lately in appearance, trains for Preston, Carlisle and (*Cont. on page 189*)

Latest Dinky Toys Achievement

AUSTIN 7 COUNTRYMAN

What lies behind the planning and the making of a new Dinky Toys model? In this article *The Editor* takes the reader through the detailed steps which are necessary before a new Dinky Toys miniature can find its way into countless thousands of homes throughout the world.

THE fine new Dinky Toys model of the Austin Seven Countryman released by Meccano Limited in April is pouring off the production lines at the rate of thousands a week. Neatly packed in the striking red and yellow boxes which are the hallmark of Dinky Toys, the new model is being distributed to dealers not only in this country, but also in many countries abroad.

Its appearance is the culmination of many months of effort and close co-operation between the Austin Motor Company and Meccano Limited.

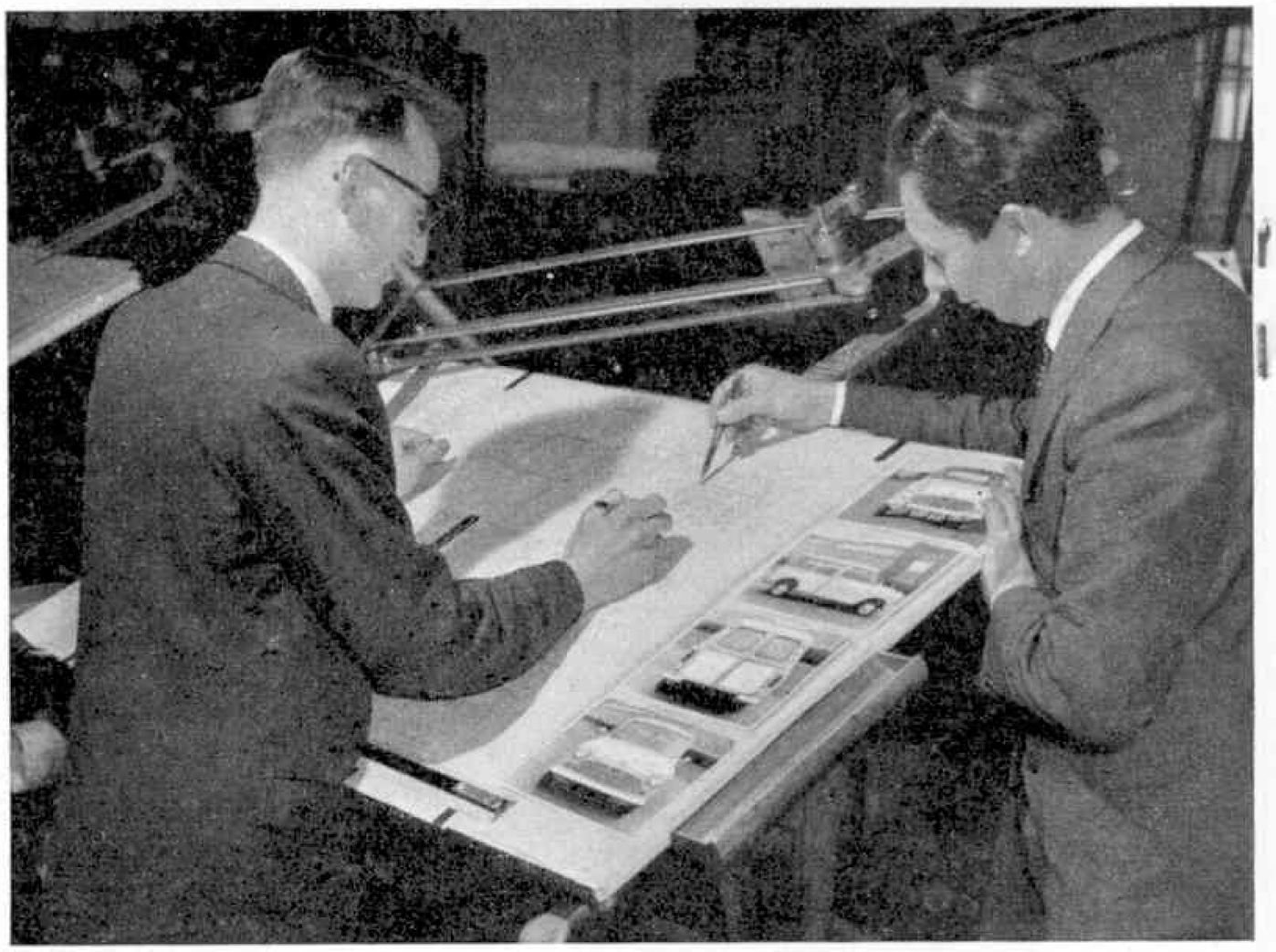
The actual Austin Seven Countryman is the half-timbered brother to the sensational Austin Seven Saloon. By comparison with the saloon, which became world-famous overnight, the Countryman has an extended wheelbase and a longer tail. The Dinky Toys model, beautifully finished in Austin Speedwell blue, has four-wheel suspension, transparent windows and "finger-tip" steering.

Just what is involved in the making of a Dinky Toy when it is decided to produce a sparkling, up-to-the-minute model such as the Austin Seven Countryman?

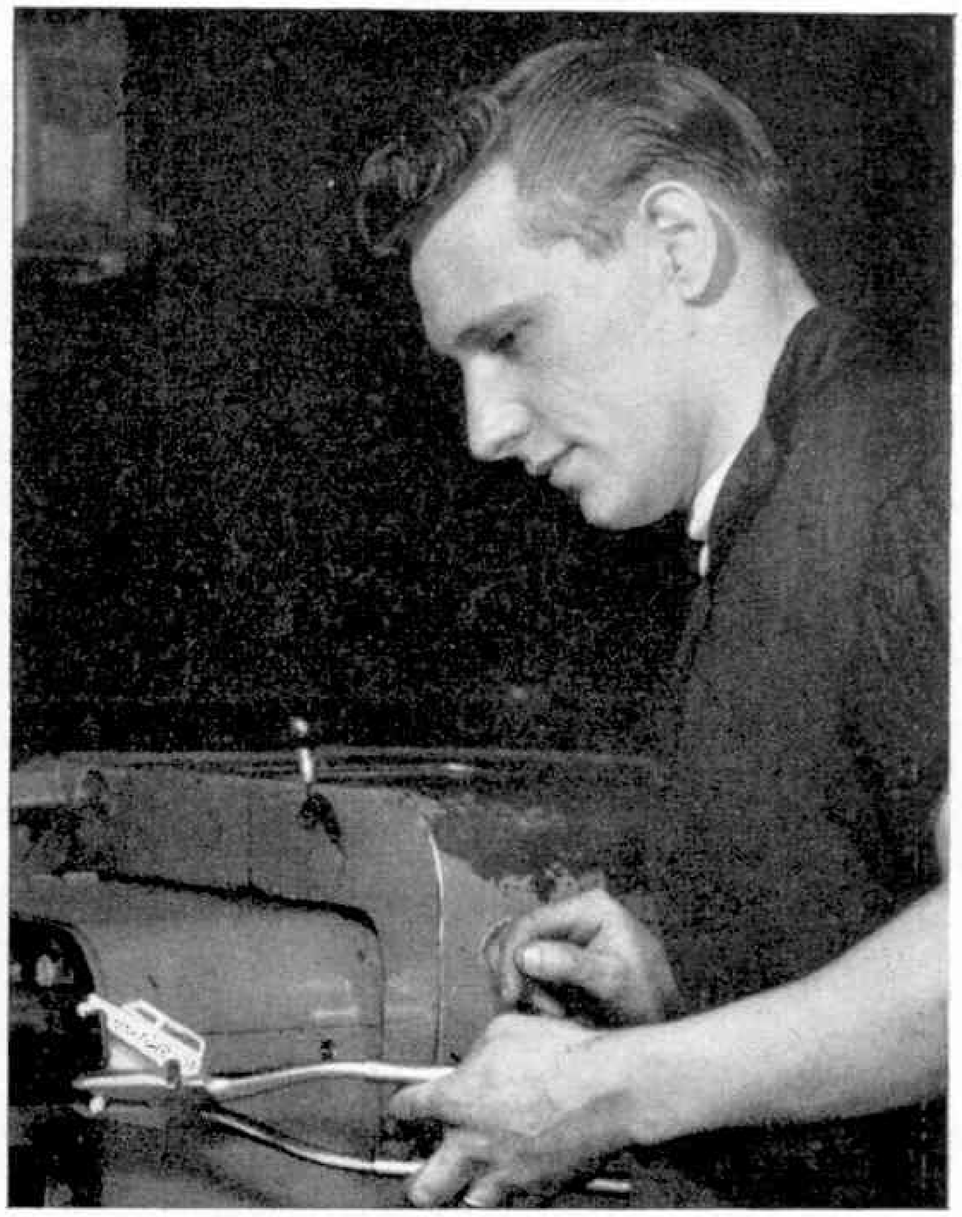
The most important thing in these days, when toy cars have got to be exact replicas of their grown-up brothers, is complete liaison between the makers of the actual car and the makers of the toy itself. This very essential part of the job was carried out to the full between the Austin Motor Company and Meccano Limited in the production of this fascinating new model.

It called for the interchange of precise information, much of which was of a confidential nature, and it meant that long before the actual model was put on the market some of the secrets of that car had to be known by keymen at Meccano Limited, where the thousands of replicas were ultimately to come off the production lines.

Production planning, began, of course, long before the model was announced. The all-important initial step was to approach the Austin Motor Company for photographs of the vehicle and general arrangement drawings. From these, new drawings were prepared for the Dinky Toys model itself at Meccano Headquarters in Binns Road, Liverpool, where design draughtsmen are continuously at work preparing drawings for a wide variety of new models. The miniature cars themselves are turned out both at Binns Road and at another huge factory at Speke, on the fringe of Liverpool. With these two factories to draw upon Meccano Limited are able to put millions of models on to the market every year.



A discussion on the Austin Seven Countryman in the Drawing Office at the Binns Road Factory of Meccano Limited (top picture). Below: The patternmaker at Binns Road prepares a wooden model of the new vehicle.



Removing the metal body of the new model from the die-casting machine.

Above: The toolmaker at work. In the lower picture you see hundreds of metal castings of the new model going through the separator.

Let us pursue further the specific example of the Dinky Toys model of the Austin Seven Countryman. While plans are being drawn of the car body, fully-dimensioned drawings have also to be prepared of the base, which carries the wheels and the arrangement for springing and "finger-tip" steering, and the interior of the car, which must accommodate seating, dashboard, steering wheel, etc.

Once the plans have been drawn up they must be meticulously checked before they are handed over to the Tool Design Department, where still further drawings are produced, so that the tools needed for the job can be made. Once the fully-detailed drawings of all essential parts are available, work proceeds on the making of the tools and the moulds for the necessary parts.

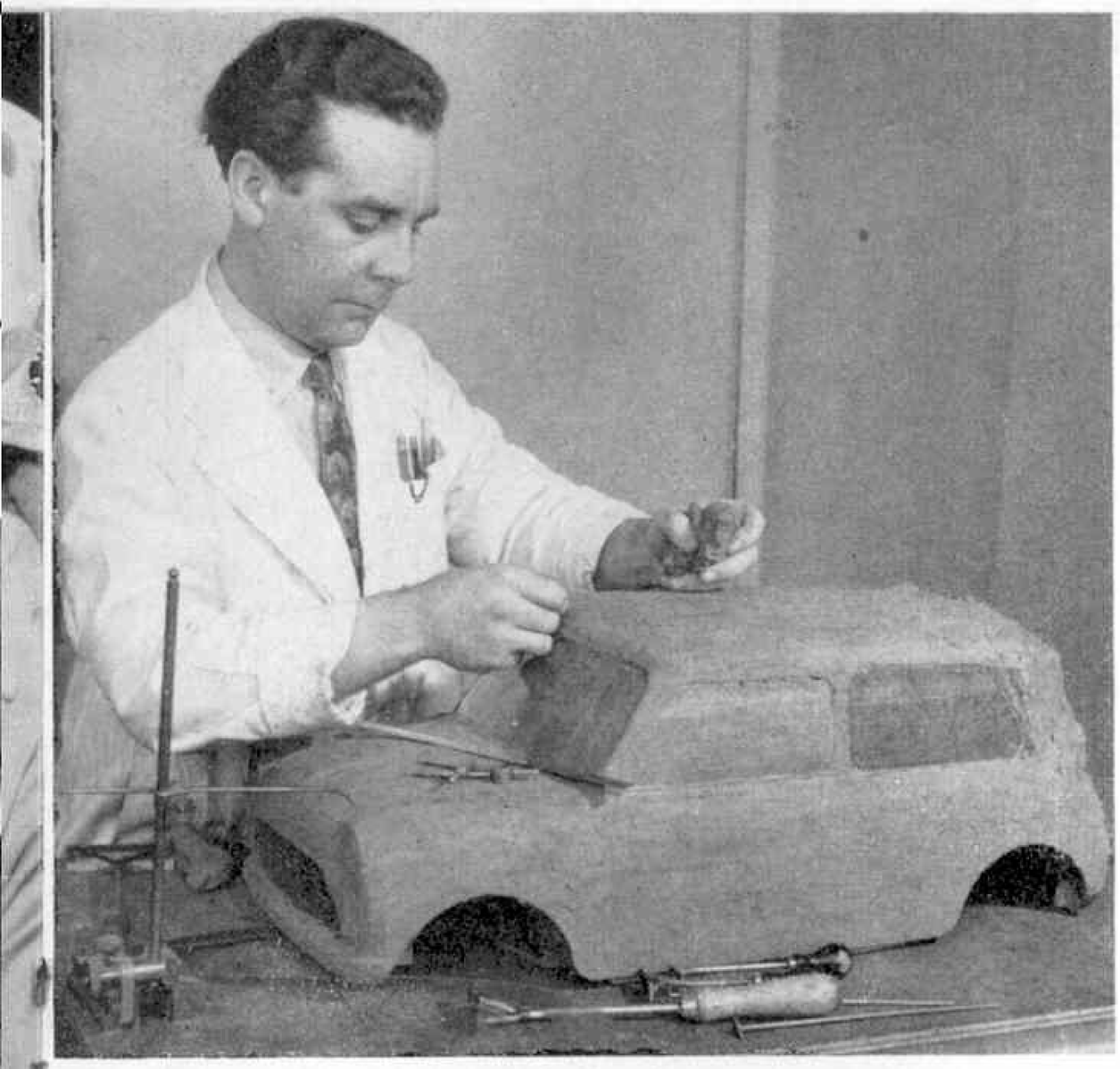
First step along this particular pathway is the production of a pattern of the vehicle in wood. So that all essential detail on the finished Dinky Toy shall be as accurate as possible, the pattern is actually two or three times bigger than the model will ultimately be. From this pattern, made by patient and skilful hands, comes the final outline around which the mould will be made. So great is the degree of care exercised in these matters, and so essential is the liaison between the firms involved, (*Continued on page 170*)

Here are more pictures from the Meccano Factories in Liverpool. Above: Putting the body castings in place on holders ready for spraying. Below: (right) The final touching up process which ensures protection in the finish of the vehicle and (left) the last inspection which precedes the trial run. A vehicle that has just passed the final scrutiny is seen on its journey down the test chute.

Assembly of the base and body of the new Dinky Toys model.

AT THE AUSTIN FACTORY

The first of the pictures below (right) shows car bodies passing through the paint plant at the Austin Motor Company's works at Longbridge, Birmingham. The spraying plant is fully automatic.



As in the case o Meccano Limited the patternmaker at the Austin factory (top) prepares a model before production starts. The model in this case is to one-quarter scale. Below: The static road test. The new car does its first few miles on rollers. Here, the gearbox, steering and brakes get their primary test. Any faults which come to light are rectified and the vehicle is re-tested on the road.

Finishing touches: As in the case of the Dinky Toys model (see picture on opposite page) the actual Countryman gets a final touch-up with a paint brush.

The four photographs on this page and that at the foot of page 170 appear by courtesy of the Austin Motor Company.

The striking realism of the Dinky Toys model of the Austin Seven Countryman—and the Morris Mini-Traveller, which is referred to on the next page—is seen in the photograph above, where the models have been used to represent a scene outside a distribution centre.

that when the pattern has been made it is taken to the car manufacturer for a last-minute, final check up on even the most minute details to ensure that the body casting which is to follow shall be as near perfect as is possible.

Once the patternmaker's work has been approved, plaster casts are made to establish the form of the mould. Related to this is the production of the die-casting tool which will eventually produce the hundreds of thousands of castings of the new model.

The actual body of the Austin Seven Countryman—and, of course, all Dinky Toys models—is cast in zinc alloy. This is of immense strength to withstand the knocking about which children can give to toys, and to cope with such situations as dropping a toy or knocking it off a table by accident. The bodies are formed within the mould by a die-casting machine when molten metal is forced at great pressure into the cavity formed by the die-casting mould. The metal solidifies almost instantly and is cool enough to be ejected from the tool without fear of distortion taking place.

Once the car body leaves the die-casting section, it proceeds to the Roto-Finishing machine which consists of a very large hexagonal barrel, revolving horizontally. There is a line of these huge steel barrels which are filled and emptied from a mobile hopper running along their front. Each barrel is loaded with castings and a measured quantity of stones which to all outward appearances are rather like the small pebbles you find on the sea shore during the summer holidays. Each barrel, too, holds a quantity of water but, although it is fairly well packed, there is always room for movement inside as the barrel revolves. The stones, being of mildly abrasive character, come into contact with the zinc bodies and remove the sharp edges, giving them a very fine, smooth finish.

After barrelling, the trimmed castings and stones are discharged into the hopper which moves them along to a separator specially designed to free the castings from the stones of the Roto-Finishing plant. Castings and stones are dropped on to a separator tray which has a wire mesh deck. This is rapidly vibrated by hydraulic power and the mesh is so adjusted that the stones fall through to a lower deck, leaving the castings on top. Both stones and castings are shaken along on their respective levels to receiving hoppers, where the castings are collected for the next process and the stones are returned to one or other of the Roto-Finish barrels.

The next process for the castings is the giant phosphating plant where they are dipped in a chemical solution to ensure maximum adhesion when the enamel is applied. During all the processes mentioned and, indeed, until the end of their

Real Austins this time—pictured outside the Austin Factory in Birmingham.

trip through the assembly plant, the Dinky Toys castings are constantly inspected to ensure that only the highest class of product is sent out to buyers.

After it has left the phosphating plant the casting of the Countryman is approaching the final stages of its journey. The next immediate stage is painting or enamelling, which is processed on semi-automatic spraying machines. Here the models are mounted on spigots and rotated while spray guns, directed on the side, top and bottom of the casting give a fine, even coat of enamel. Then the castings move on to the stoving ovens where they stay for a given period to emerge with that gleaming finish which is the pride of Dinky Toys owners.

As many modern cars have two-tone finish, there is consequently a demand for Dinky Toys of similar style. In the case of the Countryman, of course, the half-timbered outline of the body has to be simulated, and this calls for the use of masking devices by use of which only a given portion of the vehicle can be sprayed. In the case of the Countryman the colour of the "woodwork" is superimposed on the existing paintwork by this means.

While the car body is being prepared, other parts of the vehicle have also been put into production. The base, for instance, which carries the wheels has been produced in the Press Department from a special black enamel coated steel strip, the windows have been created by injection moulding from clear polystyrene, and the seats have been produced from sheet polystyrene by a vacuum-forming process. In addition, the steering wheels have been moulded in plastic and the road wheels have been turned on special automatic machines.

Thus it is that many millions of parts have had to be inspected ready for the final assembly of this one model and the important thing is, of course, that the production of all these items has to be so planned that they arrive at the focal point together. This meticulous timing of the sequence of events is one of the major jobs. The whole production must be planned just as it is in the huge factory where the actual Countryman itself is produced.

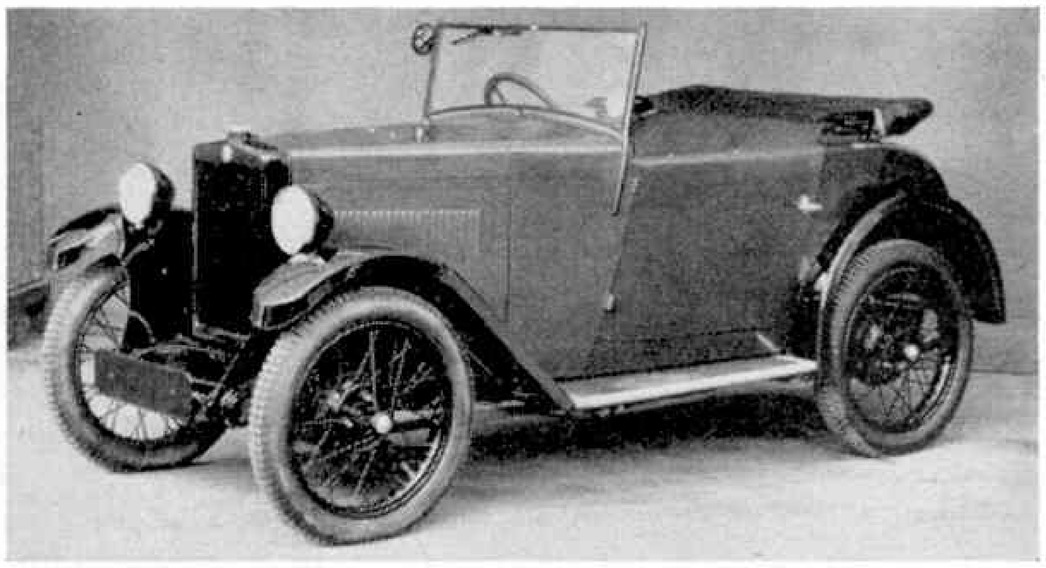
The final stage in the creation of the Dinky Toys model is reached in a huge airy room where assembly conveyors are continuously in action. Starting with bodies, wheels and bases all separate, the models reach the end of the conveyor as complete entities.

A last inspection is carried out here. Each finished model is put on an inclined chute down which it must travel quite freely of its own volition. At the other end it is lifted from the chute and put in its carton, that world-famous red and yellow packet about which we spoke earlier.

From there, through the Stock Room, it goes to the Despatch Department for distribution throughout the British Isles and to the far corners of the world.

THEY WERE DIFFERENT THEN

No. 3. The Morris "Babies"



The £100 Morris Minor of 1932.

MANY people imagine that the ubiquitous Morris Minor is a post-war car. Not so; there were Morris Minors as far back as 1929. The first had a remarkably good performance for its size, being powered by a 4-cylinder, 847 c.c. overhead-valve engine developing 20.5 b.h.p. at 4,000 r.p.m. Two body styles were offered, a fabric-covered saloon and an open four-seater, at £135 and £125 respectively.

By PATRIC BAKER

These peppy little cars proved universally popular, and in 1930 a metal-panelled saloon was introduced, to be followed shortly afterwards by a semi-sports two-seater. In 1932, metal replaced fabric on all models and a new engine was adopted. This was a side-valve unit of the same capacity, developing 19.25 b.h.p. at 4,200 r.p.m. In the same year came Lord Nuffield's first £100 car, a two-seater Minor. Other models of the period included an open four-seater and two saloons, one with a sliding roof. This range continued into 1933, when a long wheelbase saloon and coupé were added. These had a 4-speed gearbox—a refinement which, together with hydraulic brakes, was standardised on all models in the following year.

The second main milestone in the life of the Minor occurred in 1935, when an entirely new range, known as the Morris 8, Series I, was produced. These attractive, roomy little cars were fitted with a more powerful side-valve engine of 918 c.c. developing 23.5 b.h.p. at 3,900 r.p.m., and four body styles were offered—two saloons, an open tourer and a two-seater. The Series II range of 1938 brought slight styling changes, but the model remained virtually the same until the third phase of Minor development—the introduction, in 1939, of another entirely new car, the Morris 8, Series E. Conforming to fashion, the body work of the Series E was semi-streamlined with headlamps enclosed in the wing cowling. Saloon and tourer models were offered and the 918 c.c. engine of the Series I and II was tuned to produce 27.5 b.h.p. at 4,400 r.p.m.

The present gaggle of Morris Minors stems from 1948, when Alec Issigonis introduced the classic design which has continued structurally unchanged until today. This model was the first Morris Minor to be built on the mono-construction principle, with body shell and chassis in one unit. It was also the first baby Morris to have independent front suspension and rack and pinion steering.

The early cars had the (Cont. on p. 189)

Wizardry on wheels — the Morris Mini-Traveller. This picture and the photograph above are by courtesy of the Nuffield Organization, Cowley Oxford.

THE NEW DIESELS— FOR THREE-RAIL

Hornby Railway Company

By the Secretary

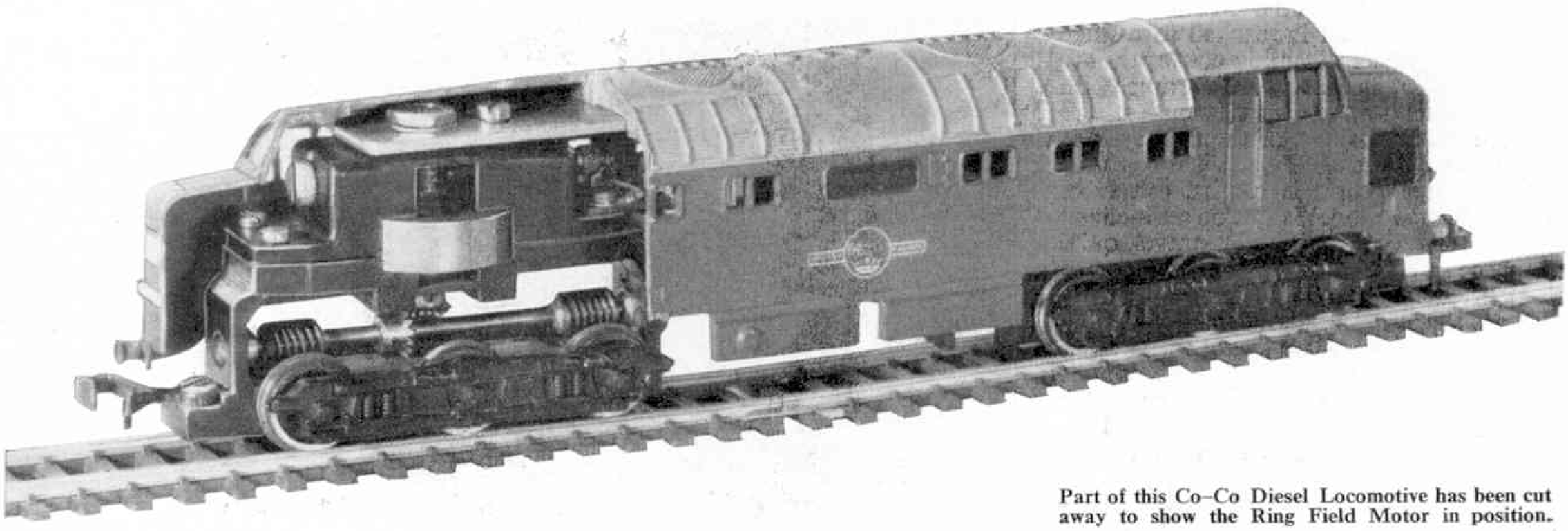
HORNBY-DUBLO owners who recall the references in these pages in recent months to the two new Hornby-Dublo Diesel Locomotives in the 1960–61 programme will no doubt be interested to hear that these, the Co–Co Diesel and the 0–6–0 Diesel Shunting Locomotive, are now becoming available in Three-Rail form.

No doubt owners of Three-Rail layouts —and there are many of them—will give a special welcome to these Locomotives as they represent the first application of the Ring Field Motor in the Hornby-Dublo Three-Rail system.

In introducing engines with this remarkable motor to our Three-Rail friends I must draw their attention to the necessity for careful maintenance as laid down in the Instruction Booklet that goes out with every Hornby-Dublo Locomotive.

Lubrication of the various bearings and other oiling points indicated in diagrams in these booklets is important, but it is equally necessary not to be over-enthusiastic about it. Excessive lubrication means that oil will find its way to parts of the motor where it is certainly not wanted. This sort of thing can encourage dust to settle and accumulate on

(Above) "City of London" passes the Engine Shed with a long-distance express formed of Hornby-Dublo B.R. Standard corridor stock.



Part of this Co–Co Diesel Locomotive has been cut away to show the Ring Field Motor in position.

the parts concerned and this can lead to various difficulties and indifferent performance. So, it is particularly necessary to keep the motor clean in every respect and—I repeat—the methods recommended in the Instruction Booklet should be carefully followed.

I am sure that all Hornby-Dublo owners, of both Two-Rail and Three-Rail Diesels, will find the cut-away view of a Co–Co Diesel that appears on the previous page most interesting. From diagrams, and even from examination of the complete engine, it is not always easy to see just how the motor fits into a Hornby-Dublo Locomotive. The picture shows you the principal parts of the power bogie with Ring Field Motor and it is evident that at the business end of the Co–Co Diesel there is little room to spare. The general layout of the motor and transmission is made quite clear in the photograph.

A point of importance in connection with the Hornby-Dublo Co–Co Diesels, and the now well-known Bo–Bo type, concerns the rubber tyres that are fitted to certain of the driving wheels. I have frequently had to point out, in correspondence, that it is essential that the tyres be kept *entirely* free from oil. This means that the wheels and, therefore, the rails must be thoroughly cleaned. Otherwise the tyres are liable to stretch and lose their efficiency rapidly. They can stretch to a certain extent in service, and they wear, so that they have to be renewed from time to time as a normal maintenance operation, but there is no difficulty about this. When the new tyres are fitted, one must take particular care to see that they bed down correctly in the grooves in the wheels. Do not try to run a Co–Co or a Bo–Bo without its tyres.

The 0–6–0 Diesel Shunting Locomotive is not fitted with rubber tyres as its driving wheels are coupled by means of side rods mounted on cranks that turn outside the dummy main frames. This is one of the features that help to give this remarkably well-detailed little locomotive its characteristic appearance, especially when in motion.

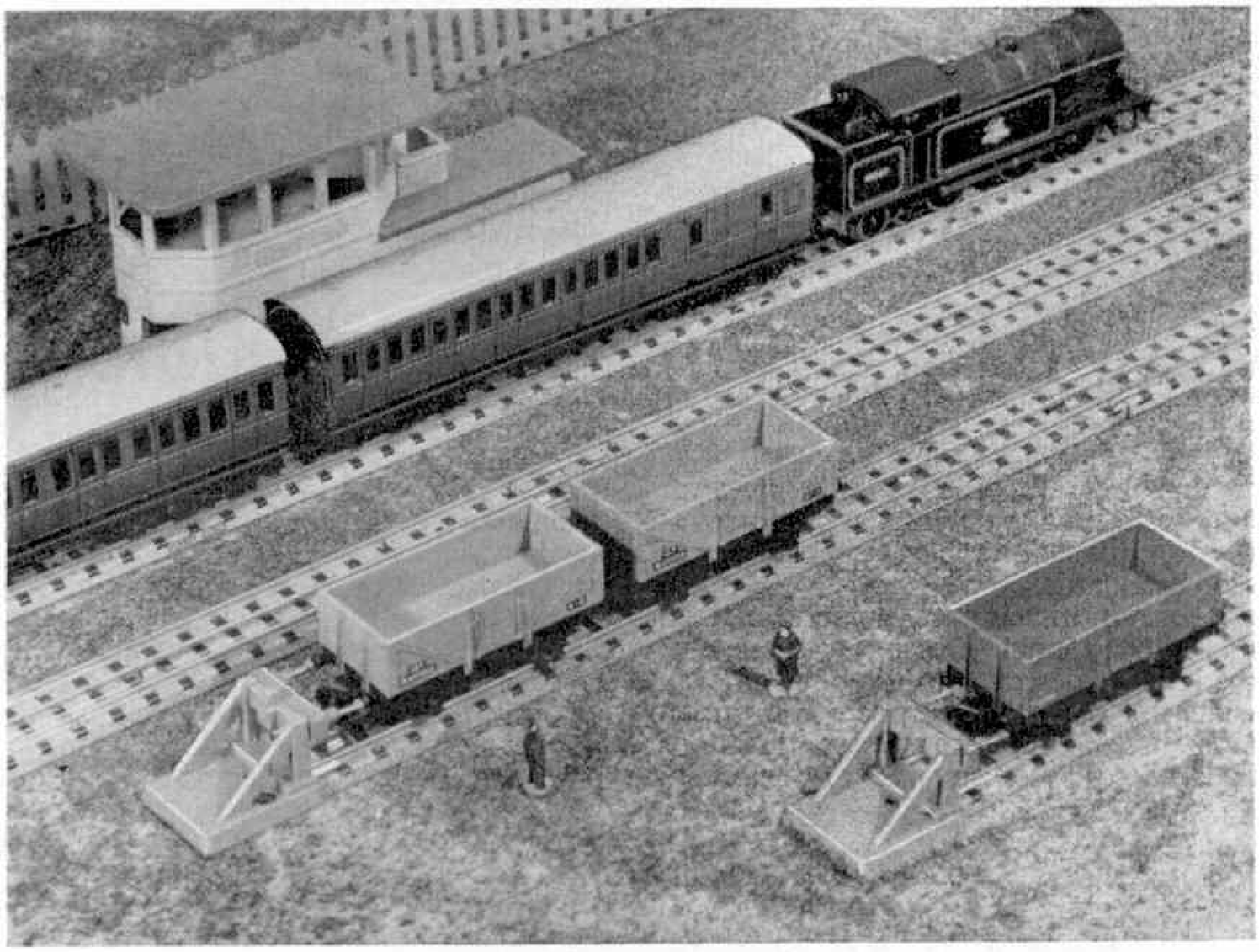
By the way, don't forget that real diesel locomotives need to be fuelled. As you are sure to have several Hornby-Dublo Coal or Mineral Wagons to cater for the needs of your steam-type engines, so you should have on your layout some of the characteristic black Fuel Oil Tank Wagons that have been included in the Hornby-Dublo System for some time.

Although oil storage tanks are located at many motive power depots where diesel fuelling takes place, it is possible to see real diesels being fuelled direct from tank wagons by means of a stationary pump located in a pump house. This is something you can follow up in miniature, when there is not a lot of space to spare on the layout. Usually, finding space for everything is one of the greatest problems that miniature railway owners encounter.

In this connection a useful feature, particularly in miniature, of a diesel locomotive such as the Hornby-Dublo Co–Co is that it runs either way equally easily and does not require turning on arrival at a terminal point. I know that most Hornby-Dublo layouts provide for continuous running, but when space permits turning facilities in one form or another are usually provided, especially where steam-type tender engines are in use.

With the Co–Co Diesel now available in Three-Rail as well as in Two-Rail form, it now becomes possible for all Hornby-Dublo owners to provide diesel power for many of their long-distance main line train services. At the same time, there is little doubt that the Co–Co and Bo–Bo Diesels will share the work with the steam-type engines, rather than take over the main line running completely. This sort of thing provides the variety of operation that appeals to most miniature railway owners. Therefore, scenes such as that shown in the upper picture on the opposite page, where *City of London* is heading a main line express, will continue to be familiar in Hornby-Dublo schemes for a long time to come.

Similarly, the familiar 0–6–2T will carry on with running of local passenger trains, as shown below, and goods workings, helped out on many layouts, no doubt, by the Bo–Bo Diesel. The latter type of diesel can sometimes appear on passenger workings during the summer months in actual practice. I know the Bo–Bo is often used in this way on quite a number of Hornby-Dublo railways.



The well-known Hornby-Dublo 0–6–2 Tank hauls a stopping train of Suburban Coaches on a layout arranged with Three-Rail track.

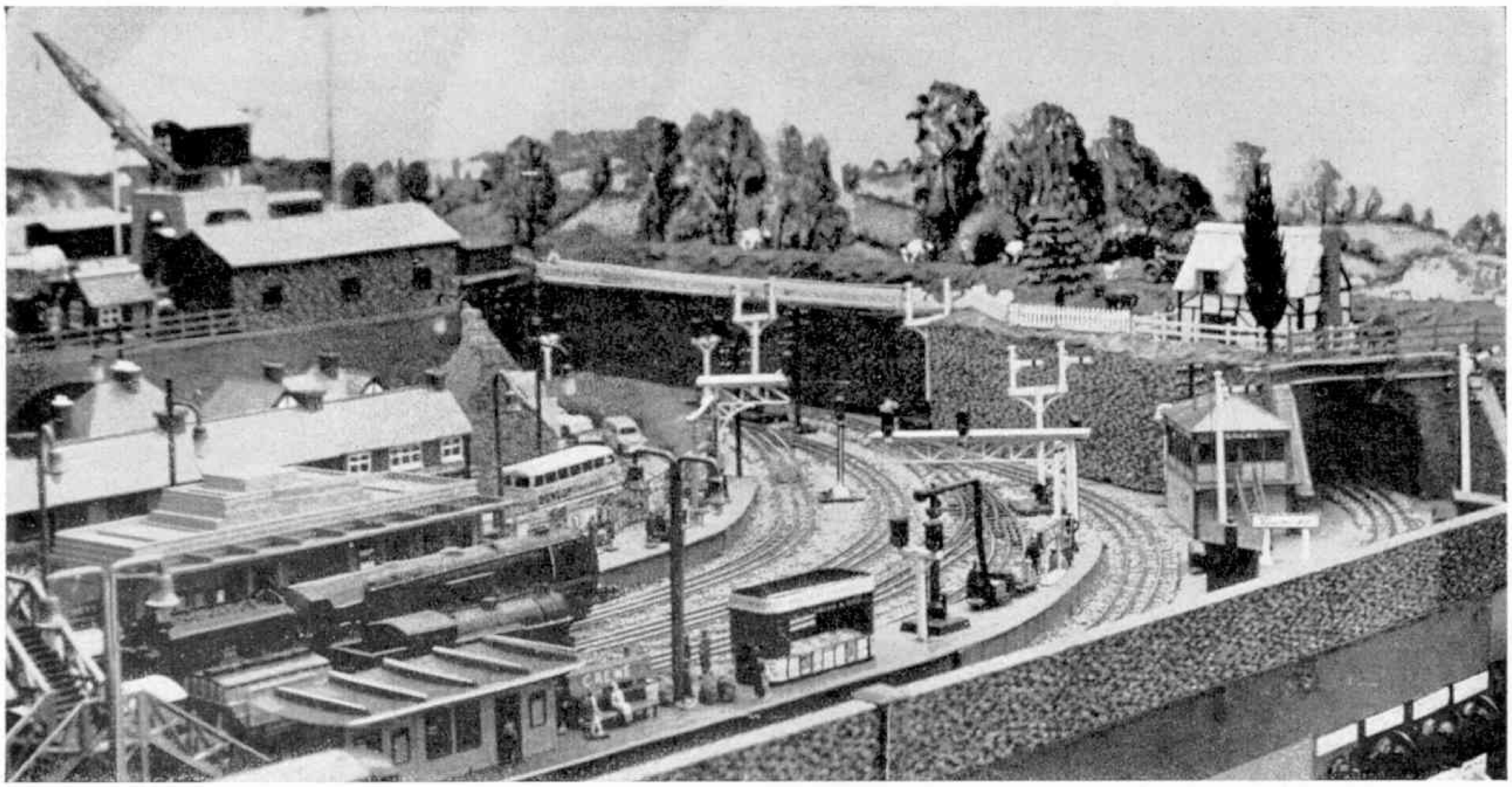
M. AND G.N. RAIL TOUR

The Midland and Great Northern Joint Railway Preservation Society has organised a rail tour for Saturday May 27. The train will consist of B.R. open corridor stock, including a refreshment car and will be hauled by a class 4 2–6–0. The train will leave Peterborough North at 10.30 a.m. and travel via Peterborough East, March, Murrow, Wisbech North, Murrow, Spalding, Sutton Bridge, Holbeach, Spalding, Bourne and Spalding to return to Peterborough North at 6.35 p.m.

The fare will be 25s. for non-members and £1.0.0d. for members, both inclusive of an illustrated itinerary. Party travel will be arranged from London (King's Cross) at 24s. for adults and 12s. for children under 14. All fares should be sent to Mr. B. Clark, Assistant Secretary, 578 Eastern Avenue, Ilford, Essex.

BOOK REVIEW

Great Northern (Ian Allan, 2/6d.) is the title of a recent publication compiled by Cecil J. Allen, whose name needs no introduction to our readers. The Great Northern Railway, as it was originally, came into being after considerable Parliamentary activity and much of its subsequent development into a main line railway was not achieved without some hard struggles. The Great Northern was enterprising and competitive and it was the southernmost partner in the East Coast Route combine. In due course, it became part of the L.N.E.R., and to-day it is called the Great Northern Line of British Railways. The author tells its story well, covering in a useful and well-illustrated 56-page, pocket-size booklet its general developments, its locomotives, train services, coaching stock and freight activities.



"THIS IS CREWE" . . . in Hornby-Dublo

I AM pleased to be able to show you this month some pictures of a rather remarkable Hornby-Dublo railway which, in spite of the title this article carries, is actually situated in Carlisle. There, James Nott (H.R.C. No. 306350), and his father Mr. W. J. C. Nott (H.R.C. No. 322607), have together built up a layout of considerable interest.

Our friends from the Border City have not had an unlimited amount of space in which to work; in fact, the notes on the layout that reached me were—with some justification—entitled *Space Hunt*! But, in the area available, seven feet three inches by four feet three inches, they have managed to make the greatest possible use of their opportunities.

* * * *

In developing the railway it was desired to evolve something different from the plain continuous circuit "round the houses", as it were, and the scheme adopted was to concentrate on one extensive main through station which, in view of the train services represented, is known as *Crewe*.

It will be clear from the two pictures of the railway that there is more than one track level. Actually, there are three levels altogether and the way in which things work out is best followed by tracing the path of a typical express for the South leaving one of the platforms at *Crewe*, situated on the uppermost layer of the baseboards.

The train travels partly round the track and into a tunnel. During its passage of the latter it descends to the bottom level, which for operating purposes is regarded as *London*. Here, there are several sections and our train enters one of these and

BY LAYOUTMAN

stops, out of sight of the operator or observer. Another train then takes up the running and makes its way, similarly, to another of these concealed sections, and so with a third train.

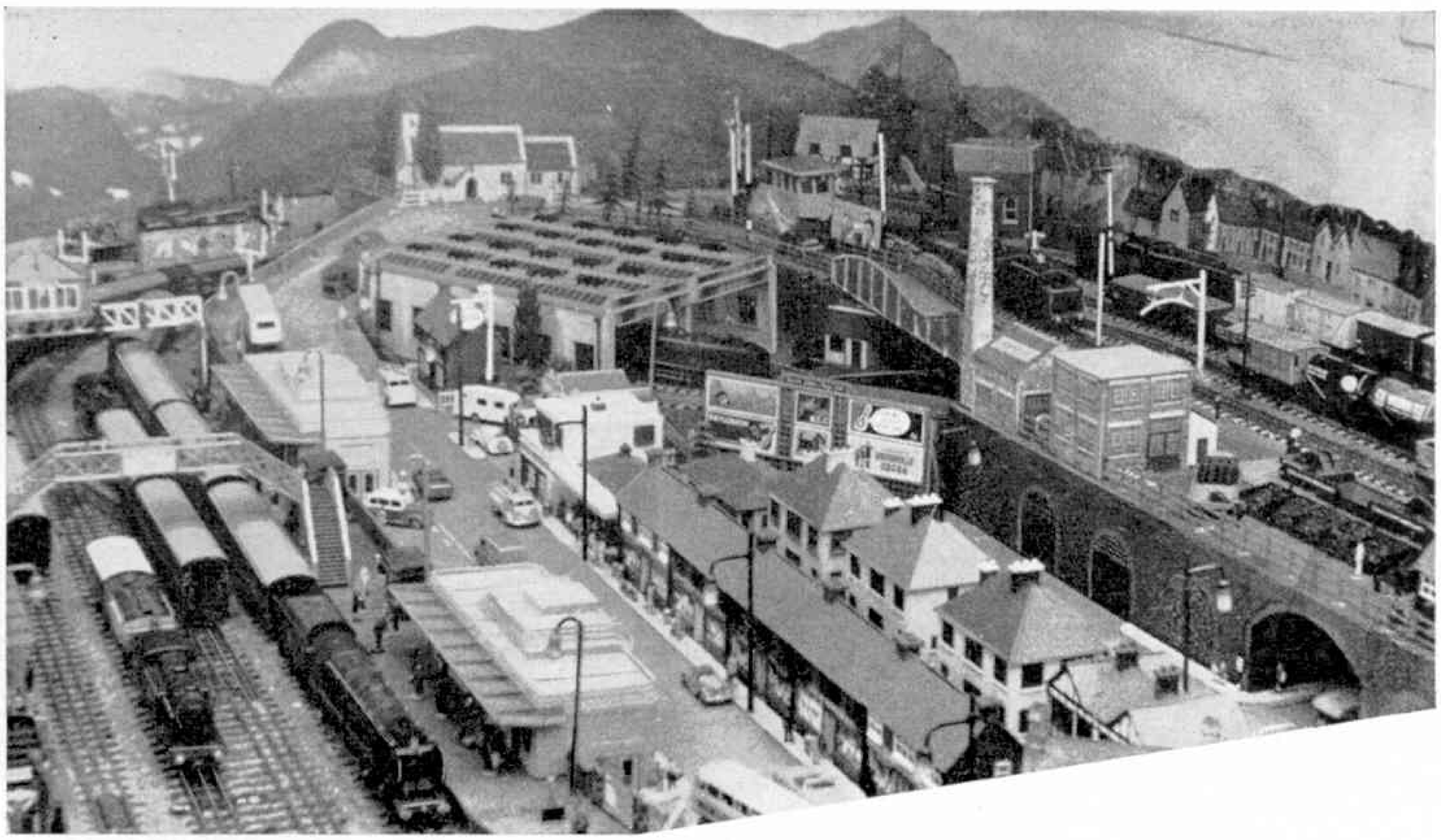
On the arrival of the last-named in the section selected, the first train is moved off again and makes its way back to the starting point, to arrive in the opposite direction from that originally followed, having been reversed in direction while "underground".

Trains for the North leaving *Crewe* are handled in a similar manner, travelling to two sections respectively representing destinations in the Scottish Region, so far as operating requirements are concerned. They, too, eventually make their way back to *Crewe*. It will be realised that this scheme means that a train leaving the starting point does not re-appear almost immediately, as on the average continuous layout, but returns again in the opposite direction several train movements later. This is an unusual arrangement which certainly helps to create the impression that there is plenty of traffic on the move and that there are, as posters and so on quite often tell us, "frequent trains to all parts".

To aid the operator, who has to know the whereabouts of the individual trains when they are out of sight, there is a series of indicator lamps relating to the various sections. These help to avoid any mishaps and, although some degree of automatic working is possible, trains can, if necessary, be moved in any order from the sections where they are temporarily held.

Our two illustrations of the railway show that there are four main tracks through *Crewe* Station, with three pairs of Points, each pair forming a crossover between the different lines.

These and other Points are so arranged that trains travelling North or South can run through the station even though certain sections may already be occupied. In addition to the main tracks there is another line serving the outer face of the Island Platform that forms part of the *Crewe* assembly. This makes it possible to run a local service over the top level track only. This does provide a "round



The impressive view on the opposite page is the operator's viewpoint on the layout of James Nott, of Carlisle. (Right) A general view across the centre of the layout.

the houses" trip, but as the train is out of sight of the operator over a considerable part of the journey, it does give the impression of having passed "out of section".

* * * *

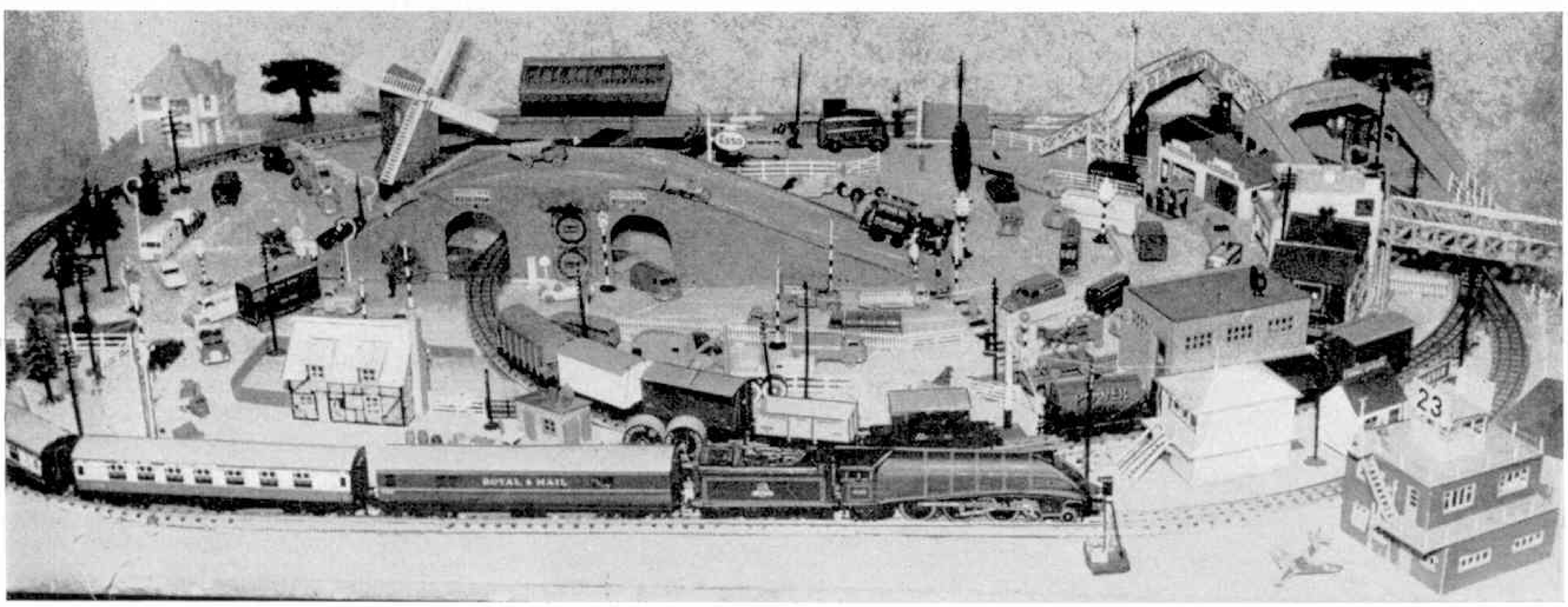
It has been possible to provide five long sidings for rolling stock and train marshalling and these arrangements, together with the turntable serving four tracks, enable operators to complete quite involved shunting and marshalling work and to effect engine changes as necessary. In view of the fact that operations are based on *Crewe*, such engine changing is quite appropriate and certainly adds to the interest and excitement of train movement. And it *can* be exciting, too, because it is possible to have eight locomotives or trains in service at one time, and the working of the traffic programme is a full-time job for two operators.

The work that has made this railway and its operations possible was shared by father and son, as is the actual running of the system. While the main frame-work and baseboard construction, as well as the electrical problems, were handled by Mr. Nott, the general carpentry, the construction and painting of the buildings and the arrangement and finishing of the scenery has been carried out by his son. Track laying and wiring was a joint operation.

Round two sides of the back of the layout as viewed from the control site the scenery has been fully completed, but the side facing the operators is simply finished off with a low wall. This ensures that the operators have a good view across the top level of the layout. The power supply, and the control gear generally, as well as the various switches involved for section control and for the working of Electrically-Operated Points and Signals, are located below the top level of the baseboard. All the control gear is on a panel that effectively disguises the presence of the underground sections previously referred to.

It was not possible to model these sections in any detail, in view of the fact that minimum headroom is maintained between the different layers of the railway in order to keep the connecting gradient sections as easy as possible.

The attractive layout of Hornby-Dublo enthusiast Stuart Haydock of Bradford, which was described in the pages of the *M.M.* last September.

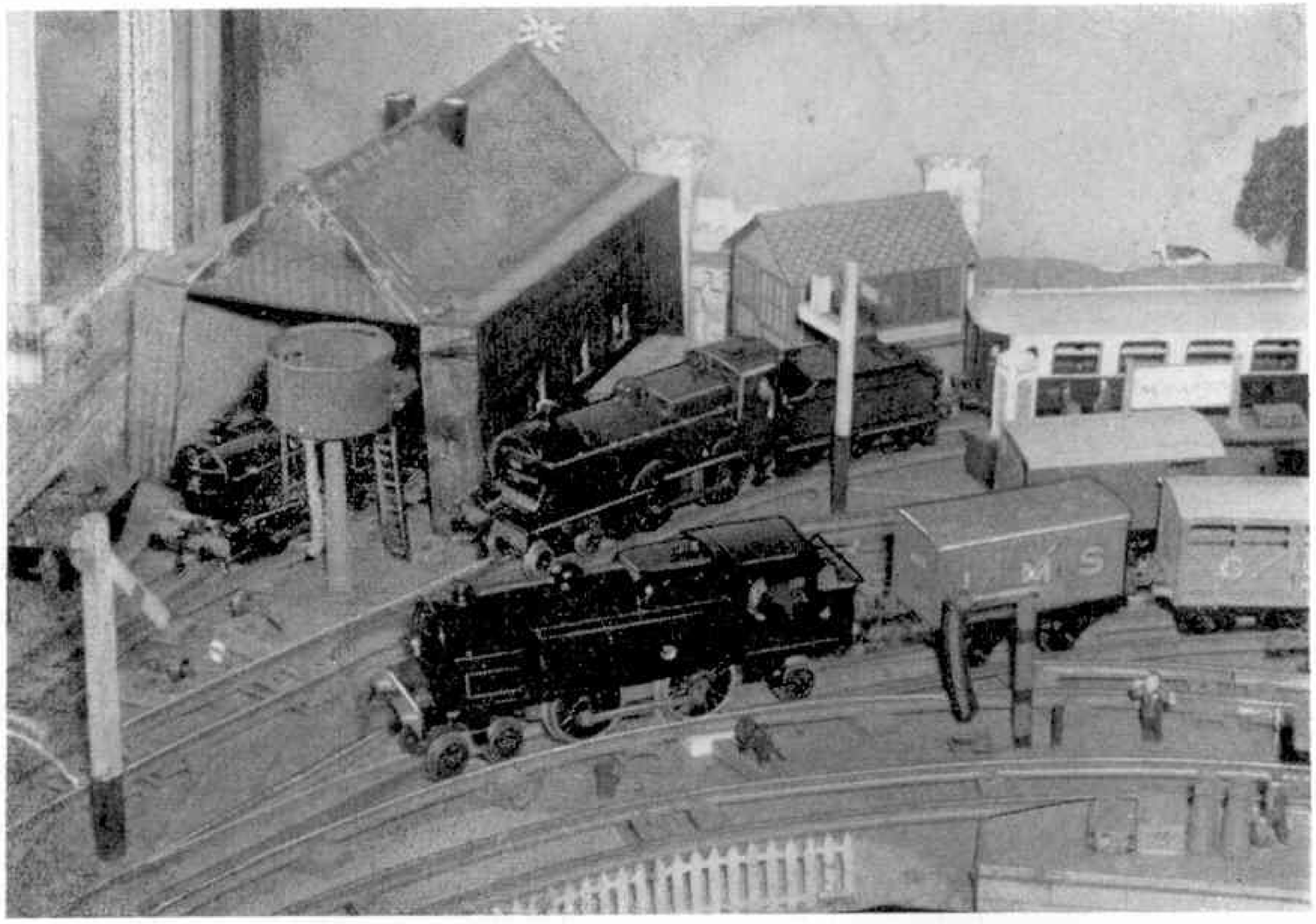


LOOKING BACK

By "Tommy Dodd"

MOST of my readers will be familiar with the Hornby Locomotives, Trains and other equipment of to-day, but not many of my younger friends will know a great deal about the engines and rolling stock of earlier years. Now and again, especially when older members of the family give them locomotives or other items they themselves had when they were youngsters, boys write to ask me how old such things may be, when they were first introduced, and so on.

I am sure, therefore, that many of you will be interested to see the corner of the Hornby Gauge 0 layout shown in the upper picture here. In the past there have been several shots in these pages of this particular spot on the railway of K. Adams, of Gloucester, but I know you will not mind the inclusion of another one, particularly as it shows, in the foreground, a type of engine that crops up most frequently in the kind of inquiries I have just mentioned. This was known as the Hornby No. 2 Special Tank, an engine having the 4–4–2T wheel arrangement and therefore somewhat larger than the only Hornby Tank Locomotive of today, the No. 40 Tank, seen in the picture below.



A lot of Hornby Train history is packed into this corner of the gauge 0 layout of K. Adams, Gloucester, briefly referred to on this page.

* * * *

The No. 2 Special Tank first appeared in 1929—quite a long time ago. It was produced with clockwork mechanism, and later in electrically-driven form, until 1939–40, when Hornby Train-building activities had to stop for the time being because of war.

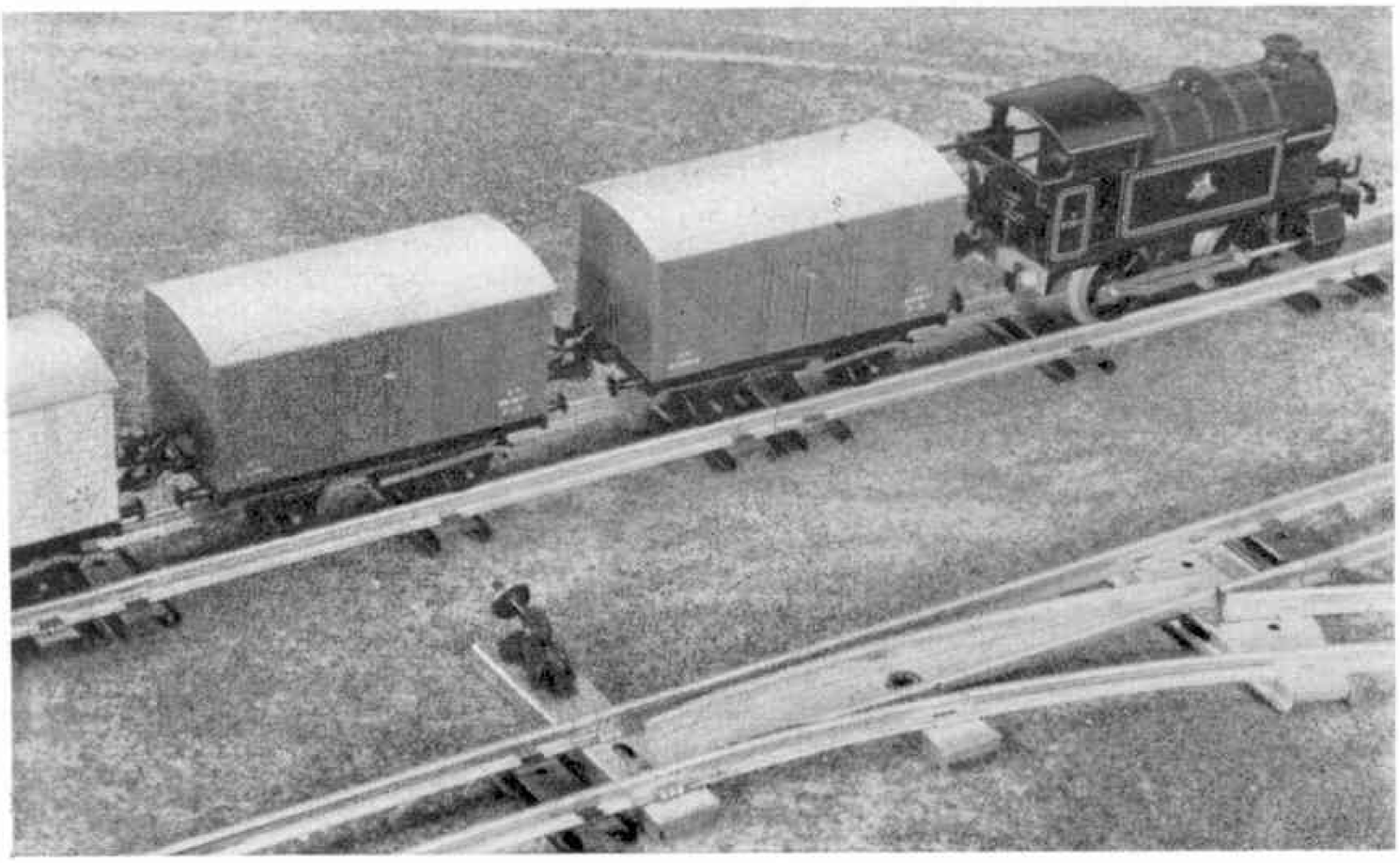
From correspondence it appears that quite a number of this type of engine, and similar elderly Hornby Clockwork Locomotives, are still in service. Indeed, on the layout shown above there are several veteran Hornby Locomotives in active use. Quite clearly they have been very carefully handled during their lifetime and the youthful Hornby Train owners of to-day should endeavour to follow this example. Sound construction and long life are built-in qualities of Hornby Locomotives, but you cannot expect the benefit of these characteristics if engines are roughly handled, rarely lubricated and generally neglected.

Careful handling is desirable not only for locomotives but for all parts of the railway system, otherwise good working is not to be expected. I have spoken to you previously about various items that need attention from time to time, but a point of special importance to Hornby Train drivers is that they should keep engines and their mechanisms clean, lightly oiling the different bearings, gears and working parts from time to time. They should take special care that oil does not find its way on to the treads of the wheels, and so on to the track, for oily track causes wheel slip and poor performance on the part of an engine.

* * * *

Although many of you will have Hornby No. 50 or 51 Locomotives, which you can reverse by means of the BBR Brake and Reverse Rail, others will possess Hornby Locomotives of different types which have to be reversed by means of the reversing rod in the cab. This can be done on the Nos. 50/51 Locomotives as well, if hand reversing is preferred. The thing to be sure about is that the forward or reverse gear, as the case may be, is fully engaged before you allow the Locomotive to move in the direction intended. Careless handling of the reversing movement can cause damage, and those who still own old Hornby Locomotives of the types shown on the Adams layout must remember that these cannot be repaired nowadays.

A present-day Hornby Locomotive, the No. 40 Tank, heads a train of No. 50 Vans along the track.



WITH THE SECRETARY

Club and Branch News

MORE NEWS FROM "DOWN UNDER"

TO think of New Zealand, in terms of the Meccano Guild, is to think immediately of the splendidly-run Meccano Club at Christchurch, whose activities and achievements have been recorded frequently in the *M.M.* In future, mention of New Zealand will remind me also of the "up and coming" Meccano Club now flourishing at Roslyn, Dunedin, some 200 miles south of Christchurch. This Club celebrated its first birthday in September last year, by which time it had already qualified for, and had been granted, affiliation to the Meccano Guild.

In a letter I have just received from Mr. C. E. Saunders, the President of the Christchurch M.C., he mentions that he has had a visit from the President of the Dunedin Club and that they had a good talk over Club doings and "ways and means". I am sure that Mr. Saunders would be able to give his visitor much useful information based upon his long practical experience of running a Meccano Club. He mentions also that "one of our members may be going to Dunedin at Easter, and if he does so will visit the Dunedin Club. I hope we will be able to establish a link between the two Clubs, in spite of the long distance between us."

This is splendid news, and reflects the true Meccano spirit. Exchange of visits between Clubs is no new thing, and it is especially gratifying when the Clubs concerned are so far apart as they are in this case.

* * * *

Shortly before Mr. Saunders' letter reached me I had received from the St. John's M.C., Dunedin, an interesting review of the Club's first year. The Club usually meets on Fridays immediately after school and members pay a weekly subscription of threepence. The meetings are held in the Blue Room of the Parish Hall, and the Club also have the use of two small rooms as "group rooms". Instead of the members being divided in the usual way into junior and senior groups, according to age, they are divided according to the Meccano Outfit they own, boys owning up to a No. 4 Outfit being in one group, and those with a No. 4 or larger Outfit in the second group. I gather that this arrangement works very well. The Club also has a modest independent stock of Meccano parts.

Meccano Club recently affiliated

STOKESLEY COUNTY SECONDARY SCHOOL (MIDDLESBROUGH) M.C.—*Leader:* Mr. T. Thackray, County Secondary School, Station Road, Stokesley, Middlesbrough.

CLUB NOTES

STOKESLEY COUNTY SECONDARY SCHOOL (MIDDLESBROUGH) M.C.—This recently-affiliated Club, with a membership of 14 at the time of writing, meets regularly on Tuesdays and Thursdays during the lunch-time break, although members are at liberty to use the Club room more often if they wish—and they do! Members are busy building the No. 8 Outfit model Mechanical Man. It is hoped to hold Club competitions and to stage an exhibition of models for all the school to see. *Secretary:* Richard Kitson, 31 Campion Lane, Hutton Rudby, Yarm, Yorks.

ASHTEAD FREE CHURCH M.C.—*Midget Models* was the subject of a recent model-building evening, and some excellent results were obtained. On another occasion Tony Drewitt gave a talk on *Puppets*. Peter Wollocott a talk about the *Guitar*, and Brian Mayes spoke on *Fishing*. A Meccano Games evening, with hoop-la, roll-a-wheel, and other devices made from Meccano, provided good fun. *Secretary:* Brian Mayes, 54 Newton Wood Road, Ashtead, Surrey.

NEW ZEALAND

CHRISTCHURCH M.C.—The first quarter of 1961 has been a period of considerable Meccano model-building activity, as the Club staged displays of working models at Riccarton High School Fair on March 18 and at Adding School Fair on April 15. They will also be "showing" again at the New Zealand Industries Fair, which will be held for two weeks in August. A Club model-building competition produced many good models, which included an orrery, steam engine, Ferris wheel, dockside cranes and, of course, a Meccanograph. The standard of model-building is well up to that attained last year, and promises well for the Elison Cup contest this year. *Secretary:* David Archer, 33 Evesham Crescent, Spreydon, S.W.1, Christchurch, New Zealand.

BRANCH NEWS

AVIARY MODEL RAILWAY CLUB (Leeds)—Several small models have been constructed recently for both the Gauge 0 and 00 layouts. Track nights have followed the usual pattern. *Secretary:* J. Baker, 10 Salisbury Terrace, Leeds 12.

The "Chutterbury Railway" was on display at an exhibition organised by the Norbury Transport and Model Railway Club and held in a local hall. Here the Exhibition Manager, Mr. D. C. Bradley, illustrates to interested visitors the importance of track side and scenic details on a model railway.

Easy Model-Building

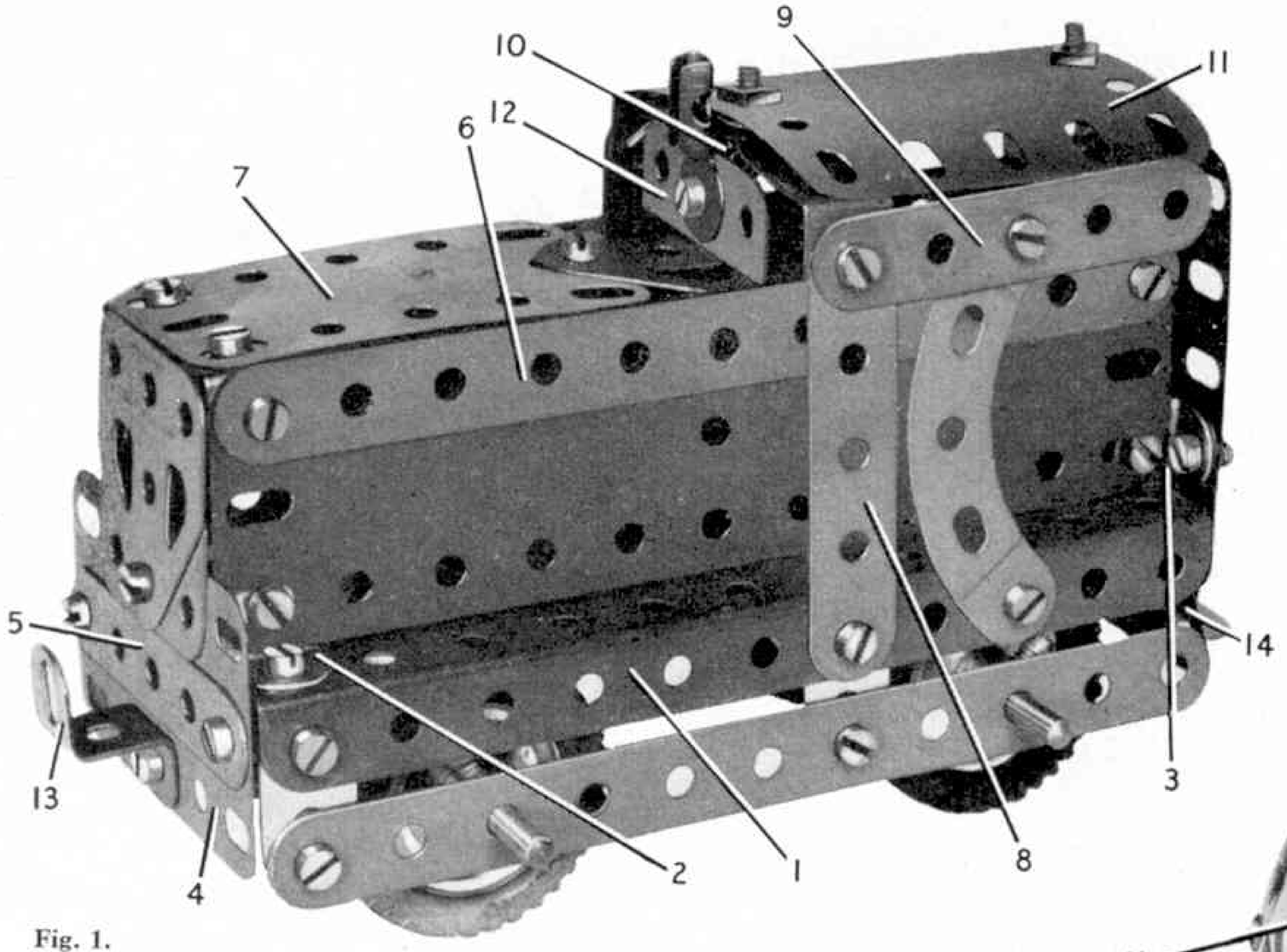


Fig. 1.

An easy-to-build model Diesel Locomotive. All the Parts contained in it are included in Outfit. No. 2.

A Diesel Locomotive built from Outfit No. 2

Owners of an Outfit No. 2 or one larger will have all the parts required to assemble the attractive, but easy-to-build, Diesel Locomotive shown in Fig. 1.

The base of this model is a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate 1; on this two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates are fixed by Angle Brackets 2. To the back of the Flanged Plate is bolted a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate, which is also bolted to the $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Plate by means of an Angle Bracket 3. A Flexible Plate 4 and a $2\frac{1}{2}''$ Strip 5 are bolted to the front of the Flanged Plate and to the front of the Plate 4 are fixed two Flat Trunnions as shown. A $5\frac{1}{2}''$ Strip 6 is bolted across the top of the $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate, and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate 7 is then fixed by Angle Brackets to the top of the tank as shown. Two $2\frac{1}{2}''$ Strips 8 are then bolted to the Flanged Plate and these are then joined at the top by a $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip, at the same time attaching the Strips 9. The Strips 9 are braced by $2\frac{1}{2}''$ Curved Stepped Strips. A second $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strip 10 is then bolted to the one already mentioned. This runs from front to rear, and at the rear it is bolted to the $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate. A $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Plate 11 is then bolted to the top by $\frac{3}{8}''$ Bolts. The Plate should be given a slight curve and should be spaced from the Double Angle Strip 10 by two Washers at the front and three at the back. A Trunnion 12 is then attached to the Plate 7 and the Double Angle Strip 10, a Rod and Strip Connector also being attached. Two $5\frac{1}{2}''$ Strips are then bolted to the bottom of the Flanged Plate by two Fishplates, and the $3\frac{1}{2}''$ Rods that carry the Wheels are journalled in them. A Reversed Angle Bracket 13 is bolted to the front to form a coupling. A Trunnion is bolted to the rear of the Flanged Plate and to it are attached a $2\frac{1}{2}''$ Strip 14 and an Angle Bracket to form the rear coupling.

Parts required to build the Diesel Locomotive: 4 of No. 2; 6 of No. 5; 4 of No. 10; 7 of No. 12; 2 of No. 16; 4 of No. 22; 42 of No. 37a; 40 of No. 37b; 5 of No. 38; 2 of No. 48a; 1 of No. 52; 2 of No. 90a; 2 of No. 111c; 1 of No. 125; 2 of No. 126; 2 of No. 126a; 4 of No. 142c; 2 of No. 188; 2 of No. 189; 2 of No. 190; 2 of No. 212.

A Model Slotting Machine for Outfit No. 4

This is a model of a machine used by engineers for shaping pieces of metal fixed to a worktable. The metal is cut by a

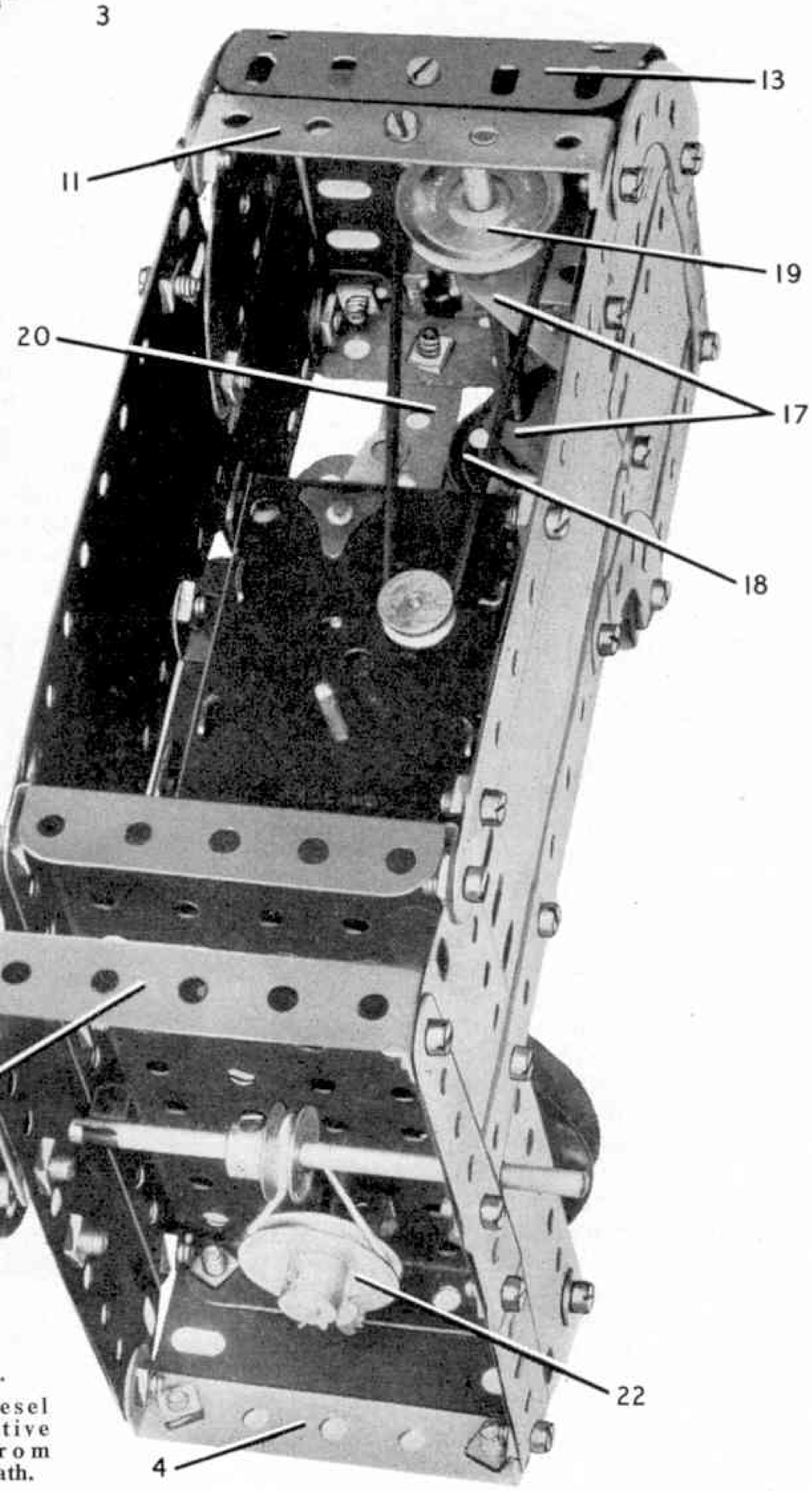


Fig. 2.

The Diesel Locomotive seen from underneath.

cutting tool fixed to a ram that moves up and down, each downward stroke being a cutting stroke.

The base of this model is a $5\frac{1}{2}'' \times 2\frac{1}{2}''$ Flanged Plate 1 to which are attached two $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 2 and a $2\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plate 3. Two $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 4 are then fixed to each end to strengthen the Flexible Plates. Two $2\frac{1}{2}''$ Strips are bolted to the bottom of each of the Plates 2 at the same time fixing a $5\frac{1}{2}''$ Strip 5 to the base and then a $5\frac{1}{2}''$ Strip 6. A $4\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 7 is then bolted to Strips 5 and 6 at the same time bolting in two Curved Stepped Strips 8. A $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate is bolted to Plate 7 and the Curved Strips 8, and is strengthened by $2\frac{1}{2}''$ Strips 9. A Semi-Circular Plate 10 is then fixed in position. Both sides of the model are constructed in exactly the same manner and they are joined together by four $2\frac{1}{2}'' \times \frac{1}{2}''$ Double Angle Strips 11. The top of the model is filled in by two $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plates 12 and 13. Plate 12 is attached to the front by Angle Brackets and also fixed to the Double Angle Strip 11. The Plate 13 also is bolted to the Double Angle Strip 11 and is then joined to the Double Angle Strip at the back by means of a Fishplate. The front of the model is filled in by a $2\frac{1}{2}'' \times 2\frac{1}{2}''$ Flexible Plate 14 fixed on Angle Brackets.

Four $5\frac{1}{2}''$ Strips 15 are then fixed to the Double Angle Strips 11 at the front by $\frac{3}{4}''$ Bolts. They are arranged in pairs as shown and are separated from each other by Washers. A $2\frac{1}{2}''$ Strip 16 is then placed in the gap between the Strips 15 and a $3\frac{1}{2}''$ Strip is bolted at right-angles to it. It is important to ensure that this Strip can move freely up and down.

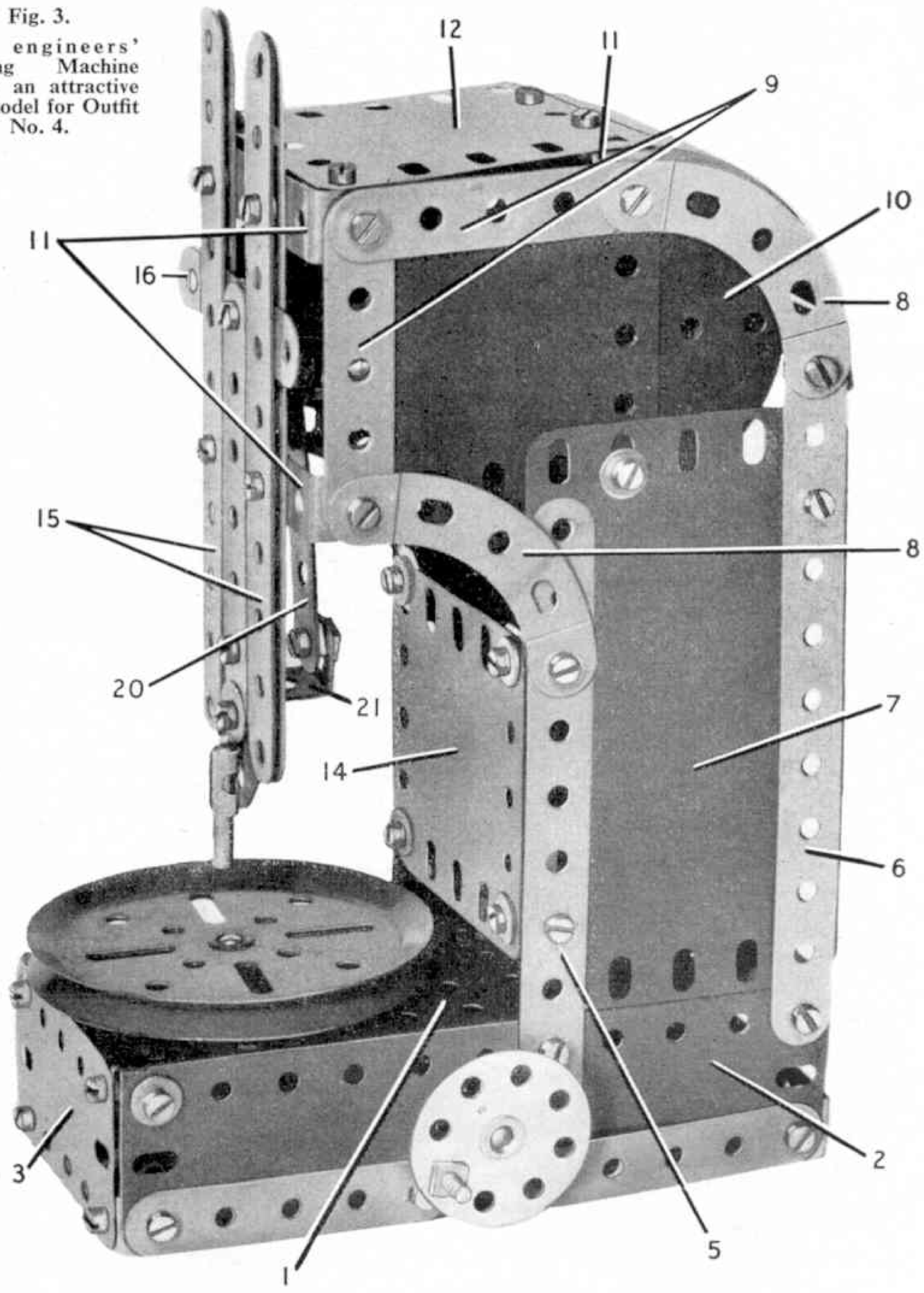
A Flat Trunnion is bolted to Strip 16, at the same time fixing a Rod and Strip Connector to the front and a Reversed Angle Bracket 21 to the back. The Rod and Strip Connector holds a $1''$ Rod, which represents the cutting tool.

Two Trunnions 17 are fixed inside the model and these hold a $3\frac{1}{2}''$ Rod to which are attached two $1''$ Pulleys 18 and 19. The Rod is kept in position by a Spring Clip. An Angle Bracket is then bolted to the boss of the Pulley 18 and its other lug is then lock-nutted to a $2\frac{1}{2}''$ Strip 20. The lower end of Strip 20 is then lock-nutted to the Reversed Angle Bracket 21. A *Magic* Motor is fixed inside the casing as shown and its driving pulley is connected by a Driving Band to the Pulley 19.

A $1\frac{1}{2}''$ Rod is fixed in a $1''$ Pulley 22. This is then journalled in a Reversed Angle Bracket and the Flanged Plate 1 and a $3''$ Pulley is fixed to its upper end to represent the worktable. A $3\frac{1}{2}''$ Rod carrying a $\frac{1}{2}''$ Pulley with boss is pushed through the centre holes of the $5\frac{1}{2}'' \times 1\frac{1}{2}''$ Flexible Plates 2, and is fitted at one end with a Bush Wheel, in one of the holes of which is a $\frac{3}{8}''$ Bolt to form a handle. A piece of Cord is used to make a belt to connect the $\frac{1}{2}''$ Pulley with the $1''$ Pulley on the spindle of the $3''$ Pulley forming the worktable. When the Bush Wheel is turned the worktable will then rotate.

Parts required to build the Slotting Machine: 8 of No. 2; 2 of No. 3; 9 of No. 5; 1 of No. 10; 7 of No. 12; 2 of No. 16; 1 of No. 18a; 1 of No. 18b; 1 of No. 19b; 3 of No. 22; 1 of No. 24; 2 of No. 35; 61 of No. 37a; 54 of No. 37b; 14 of No. 38; 6 of No. 48a; 6 of No. 52; 4 of No. 90a; 5 of No. 111c; 2 of No. 125; 2 of No. 126; 1 of No. 126a; 1 of No. 188; 2 of No. 189; 4 of No. 190; 2 of No. 191; 1 of No. 200; 1 of No. 212; 2 of No. 214; 1 *Magic* Motor.

Fig. 3. This engineers' Slotting Machine makes an attractive new model for Outfit No. 4.



BOOK REVIEWS

Two more aircraft books in the Ian Allan list are *Civil Aircraft Markings* and *Aircraft Quiz*. The former, by John W. R. Taylor (price 2/6d.) is the 1961 edition of a popular reference work which is issued each year. No one is keener than the air student to keep thoroughly up to date and *Civil Aircraft Markings*, revised to include all the latest data, is an invaluable asset to the enthusiast. All the illustrations are new.

Issued at 1/6d. *Aircraft Quiz* is the fourth in a series of quiz books dealing with forms of transport published by Ian Allan. Questions, silhouettes and illustrations occupy the first half of the book; the answers follow. K. G. Munson, the author, has obviously taken considerable pains preparing the questions which cover four general categories. There are also two pictorial tests for the keen spotter.

The 1961 edition of "*Motor Cycling*" *Sports Yearbook* (Temple Press, 7/6d.) covers very fully all the events of the sport last year. Geoff Duke, O.B.E., starts the book with an excellent general survey of the year's sport, in which he comments that the 1960 World Championship series "produced the best racing we had seen for several years past." Les Archer reviews the year's Scrambles and Motor-cross events; Len Cole writes on Sprinting, and Phil Irving on Technical Developments of 1960. There are the usual chapters dealing with the Grand Prix Racing events; 1960 T.T. Races; Manx Grand Prix; Six Days Trials, and Trials of the Year; in every case with authoritative comment and full results. Sporting personalities of the year are pictured; the latest competition machines are described and illustrated; there is a full Sports Calendar for 1961.

ATTRACTIVE NEW MODEL

A MOTOR-DRIVEN FRET-CUTTING MACHINE

AS a change from the ordinary run of model-building I have chosen a rather unusual subject for my new model this month, and it is one that should appeal to those with a fair assortment of Parts and an E15R or E20R Electric Motor at their disposal.

It is the fret-cutting machine illustrated complete in Fig. 1 and while is it quite easy to construct, it is sturdy and will be found quite useful for working in thin veneer or balsa wood.

In constructing the machine it is advisable to start with the framework, which is built up from four 7½", four 5½" and four 4½" Angle Girders and is braced at each end by crossed 5½" Strips placed as shown in the illustrations. Two 4½" Angle Girders 1 and 2

BY SPANNER

are bolted to the ends of the frame and these are connected by a 7½" Strip 3. A 5½" × 3½" Flat Plate 4 is bolted across the base of the frame and to this is bolted an E15R Electric Motor.

THE SAW FRAME

The lower arm of the saw frame consists of four 9½" Angle Girders. These are joined together by bolting them to the lower ends of two 5½" Angle Girders 5 between which are placed two 5½" Flat Girders 6. On each outer side of the Flat Girders is a Corner Gusset. At the front end the 9½" Angle Girders are joined together by two Fishplates, placed between the Girders and held by the bolts 7 and 8. Two Washers are also placed on the holding bolts for spacing purposes.

The upper arm 9 of the saw frame is constructed from two 9½" Angle Girders and is connected to the back of the frame in a similar manner to the lower arm. Two Washers are placed on the bolt 10 between the Corner Gussets, for spacing purposes, and the front ends of the 9½" Girders are connected together by means of a 1½" Angle Girder 11. A Double Arm Crank 12 is also bolted across the top of the arm in the position indicated in the illustrations.

THE WORK-TABLE

The work-table is formed by two 3½" × 2½" Flanged Plates. Two 3½" Double Angle Strips 13 and 14 are bolted to the lower arm of the saw frame and to the lugs of these, 1½" Corner Brackets are bolted as indicated.

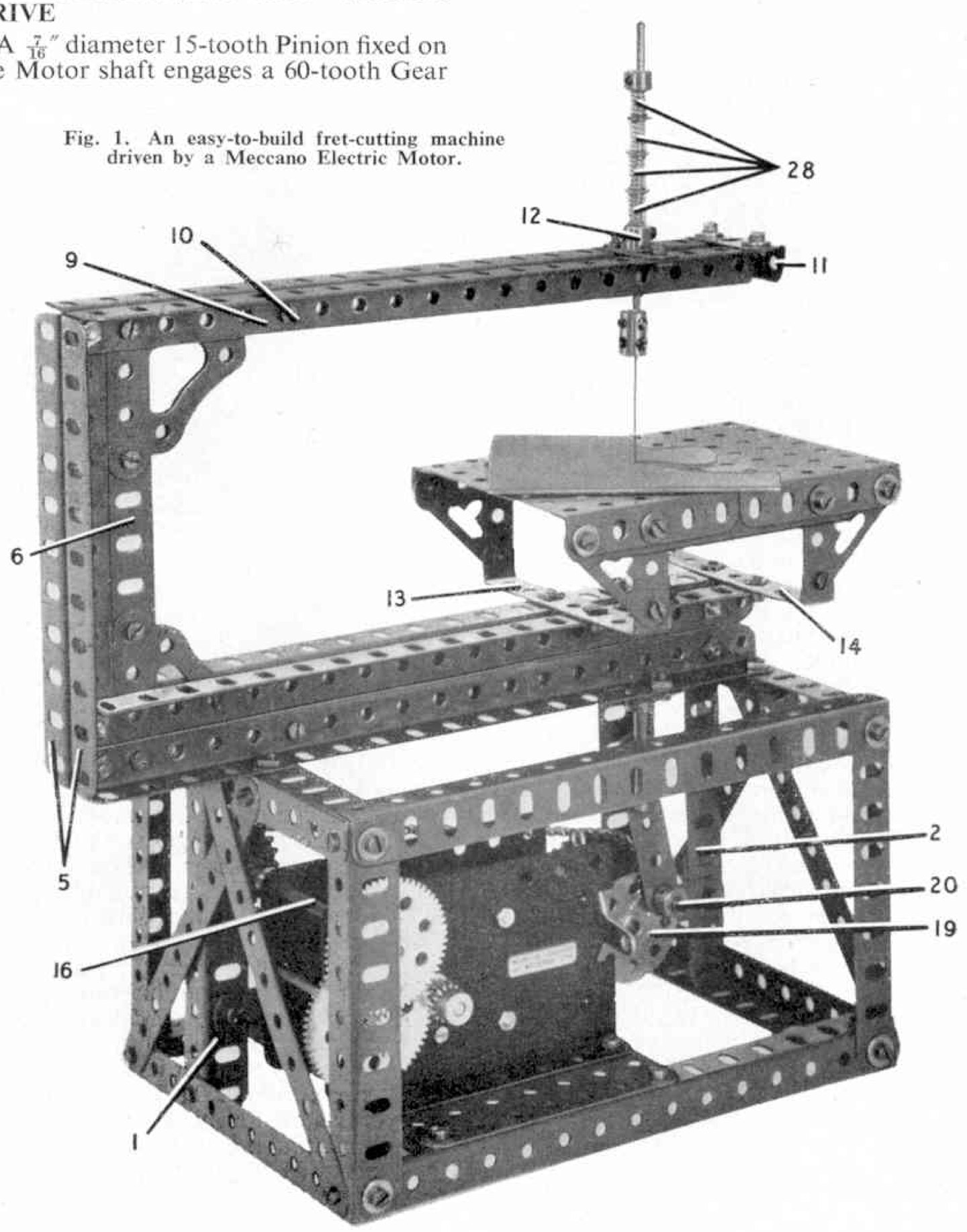
To the top edges of the Corner Brackets on each side of the machine a 4½" Angle Girder 15 is bolted and the work-table is then fixed in position.

SAW MECHANISM AND MOTOR DRIVE

A $\frac{7}{16}$" diameter 15-tooth Pinion fixed on the Motor shaft engages a 60-tooth Gear fixed on a short Rod mounted in the Motor side-plates. Also on this Rod is a ½" diameter 19-tooth Pinion that engages a 57-tooth Gear fixed on a 4½" Rod 16, also mounted in the motor side-plates. A 1" Sprocket Wheel on this Rod is connected by Chain to a 2" Sprocket Wheel fixed on a 3" Rod 17 that is mounted in the 7½" Strip 3 and in a similar Strip 18 fixed across the outside of the base-frame.

On the inner end of Rod 17 is a Bush Wheel 19 fitted with a Threaded Pin 20. A 2½" Strip, forming a connecting rod, is placed over the Pin and held in place by a Collar, as shown, and the upper end of the Strip is attached by a bolt to a Collar 21. The Collar 21 is gripped by the bolt on the end of a 4" Rod with Keyway 22, which is passed through the boss of a Double Arm Crank 23 and the centre hole of a 1½" Strip 24 bolted across the lower and upper sides of the lower saw-frame arm respectively. A Key Bolt is inserted in the boss of the Crank 23 so as to prevent the Rod with Keyway from turning in the Crank, but at the same time allow the Rod to move freely up and down in the boss.

Fig. 1. An easy-to-build fret-cutting machine driven by a Meccano Electric Motor.



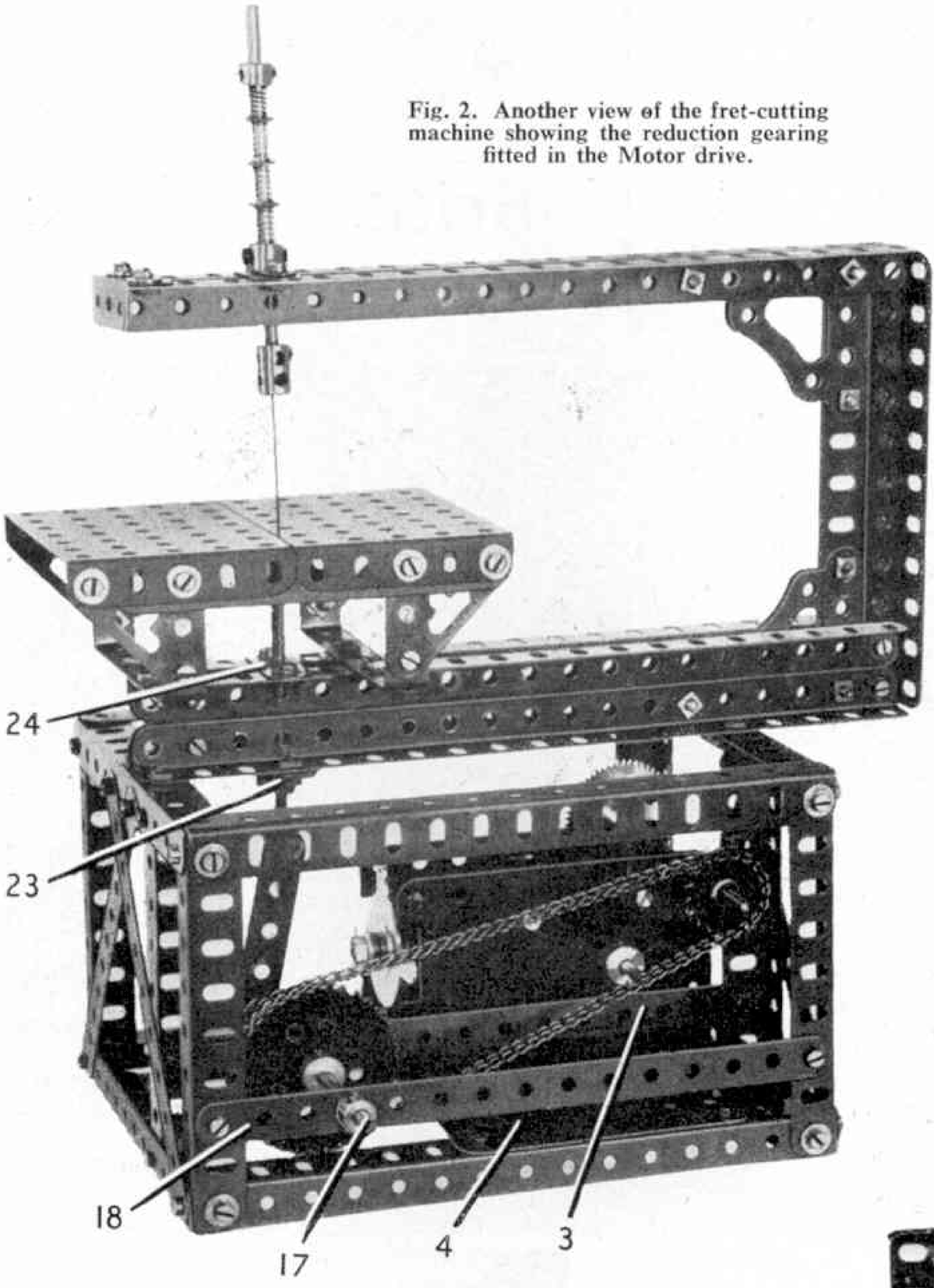


Fig. 2. Another view of the fret-cutting machine showing the reduction gearing fitted in the Motor drive.

Fixed on the upper end of the Rod with Keyway is a Short Coupling 25, in which the lower end of a fret-saw blade is fixed.

The upper end of the saw blade is gripped in a Short Coupling 26 fixed on the lower end of a second 4" Rod with Keyway 27. The Rod with Keyway is mounted in the boss of the Double Arm Crank 12 and on it are placed four Compression Springs 28, each separated from the others by a Washer, as shown. The Springs are held in place by a Collar 29. A Key Bolt is inserted in the boss of the Double Arm Crank 12 to locate in the groove of the Rod with Keyway and prevent it from turning, while leaving it free to move up and down in a similar manner to the Rod 22. This completes the construction of the model.

When the Motor is switched on, the action of the crank formed by the Bush Wheel and Threaded Pin 20 causes the saw blade to move up and down, the purpose of the Compression Springs 28 being to assist in the upward stroke and to apply tension to the saw blade.

Suitable blades for use in this machine can be obtained quite cheaply from any dealer in fretwork tools and supplies.

Parts required to build the Fretwork Machine: 2 of No. 1b; 4 of No. 2; 1 of No. 5; 1 of No. 6a; 6 of No. 8a; 4 of No. 8b; 6 of No. 9; 8 of No. 9a; 1 of No. 9f; 3 of No. 10; 1 of No. 15a; 1 of No. 16a; 1 of No. 16b; 1 of No. 24; 1 of No. 26; 1 of No. 26c; 1 of No. 27c; 1 of No. 27d; 74 of No. 37a; 66 of No. 37b; 42 of No. 38; 2 of No. 48b; 1 of No. 52a; 2 of No. 53; 8 of No. 59; 2 of No. 62b; 2 of No. 63d; 1 of No. 94; 1 of No. 95; 1 of No. 96; 2 of No. 103; 4 of No. 108; 9 of No. 111c; 1 of No. 115; 4 of No. 120b; 4 of No. 133; 2 of No. 230; 2 of No. 231; 1 E15R Electric Motor; 1 Fret-saw Blade.

"AUTUMN MODEL-BUILDING COMPETITION" PRIZE WINNERS

Section A

1st Prize, Cheque for £4.4.0: R. v. Rooij, Eindhoven, Holland. 2nd Prize, Cheque for £2.2.0: P. F. Stanbury, Llanelly. 3rd Prize, Cheque for £1.1.0: A. P. King, Portchester, Hants.

Five Prizes each of 10/6: M. C. Thew, Paignton; J. Stephens, Darlington; M. F. Fishwick, Marple; K. Alexander, Auckland, E.2, New Zealand; R. Cole, Enfield.

Five Prizes each of 5/–: D. Clarke, Fife, Scotland; K. Corlett, Barrow-in-Furness; N. C. Baines, Southampton; R. J. Battersby, Oxford; I. D. Singer, Los Angeles 19, U.S.A.

Section B

1st Prize, Cheque for £4.4.0: M. Brookfield, Blythe Bridge. 2nd Prize, Cheque for £2.2.0: F. Pickles, London, S.E.18. 3rd Prize, Cheque for £1.1.0: Dr. Gustave Gingras, Quebec, Canada.

Five Prizes each of 10/6: K. Hoorn, Amsterdam, W.2, Nederland: E. P. Steffens, Haarlem, Nederland; K. J. Shrewsbury, Burton-on-Trent; G. Servetti, Piacenza, Italy; J. Attard, Marsa, Malta, G.C.

Five Prizes each of 5/–: D. Read, Didsbury, Manchester, 20; L. Villa, Gibraltar; H. Manning, London, N.12; J. C. Palmer, Droitwich Spa; R. D. Couchman, Pershore.

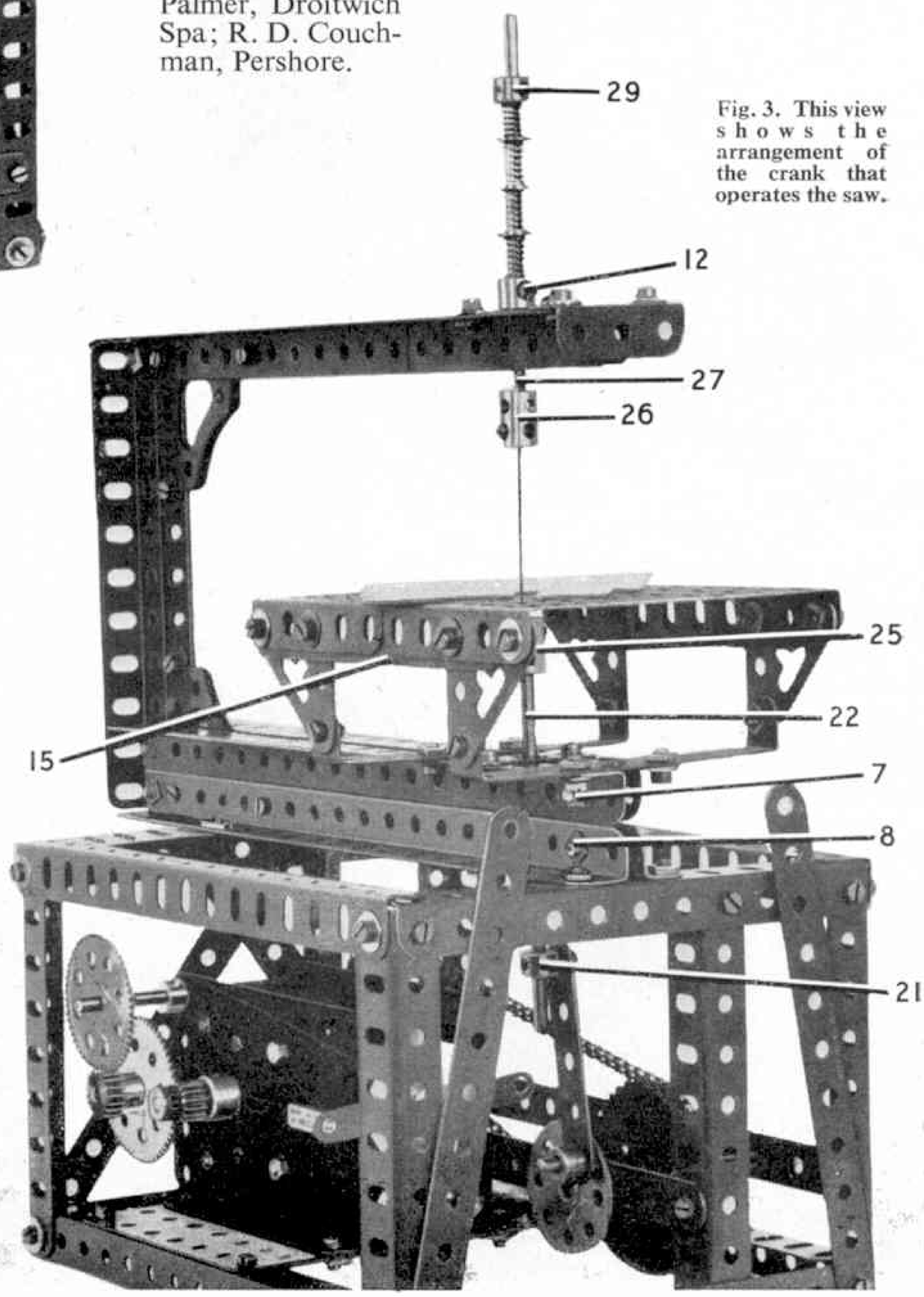


Fig. 3. This view shows the arrangement of the crank that operates the saw.

OF GENERAL INTEREST

The Glory Of Britain's Trees

OAKS FROM ROBIN HOOD'S DAY

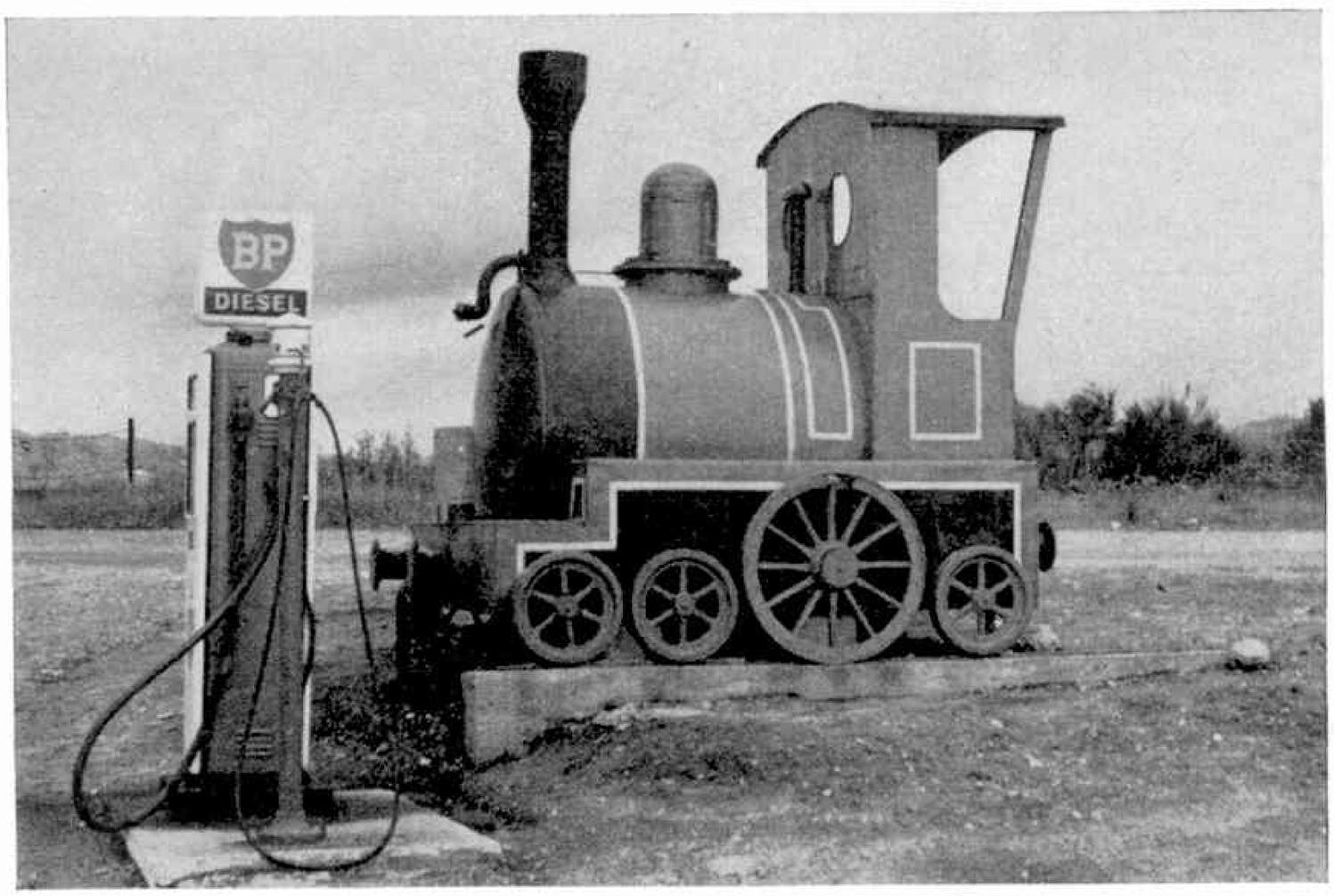
SHERWOOD FOREST once covered 200 square miles, but much of it has now been cut down.

Legend tells us that one of its trees, a huge oak, known as the Major Oak, hid Robin Hood and his merry men from the Sheriff of Nottingham. It still stands today near the town of Edwinstowe, sixteen miles from Nottingham, and you see it pictured on the right. This giant tree is hollow and will hold, so it is said, 27 people. Nearby is another large oak called Shambles Oak, or Robin Hood's Larder.

Another unusual tree is the Priory Oak in the town of Carmarthen. There is not much of this tree left but the local Council has put railings round and shored it up with cement.

Merlin, the wizard and prophet of olden days, is said to have prophesied that "when Priory Oak doth tumble down, then shall fall Carmarthen Town". The local people are taking no chances.

The quaint engine pictured below attracts considerable attention at Harehill Service Station at Murcar, Aberdeenshire. Picture: G. H. Robin.



One of the most interesting of the Cinque Ports is the ancient market town of Sandwich which was in existence before the year 665, and held a charter of incorporation from Edward the Confessor.

The town walls, built in 1450, have been converted into a promenade known as the Ropewalk, but of their five gates, only one, called the Fisher Gate (pictured above) now remains. The streets are narrow and their gabled houses have ornamental cornices and carved doors.

Meccano Limited this year once again exhibited at the Nuremburg Toy Fair, which is the biggest international trade fair for toys. The Meccano stand was visited by Professor Ludwig Erhard, Minister for Economic Affairs of the Federal Republic of Germany, who is seen in the top picture (right) being greeted by Mr. Norman Craig, Export Manager of Meccano Limited. Professor Erhard expressed great admiration of the new Dinky Toys model No. 186, a miniature of the Mercedes Benz, which is a German car. Other visitors to the stand included Sir Christopher Steel (British Ambassador to Bonn) and Lady Steel, seen, with Mr. Craig, in the lower picture. The display was also visited by the Russian Ambassador to the Federal Republic.

Sir Christopher Steel and Lady Steel admire the Hornby-Dublo Two-Rail layout at the Nuremburg Toy Fair.

Eiffel Tower Is Exhibition Attraction

One of the highlights of an exhibition of boys' hobbies at Bemrose School, Derby, was a 7 ft. 10 in. high model of the Eiffel Tower made by 14-year old Geoffrey Thomas, of Form 4c. The model took him five months to build, and is complete with electric lift.

Geoffrey, who lives in Queen's Drive, Littleover, Derby, has had a Meccano Set since he was six. He has built up his stock over the years and now values it at over £80.

The model of the Tower won him a first prize and, in 1959, he won a second prize in the school exhibition with a model of a ship's automatic coaling plant.

A regular reader of the *Meccano Magazine*, his other interests include stamp collecting and photography. Our picture shows Geoffrey (on the right of the model) demonstrating it to his enthusiastic school friends. The photograph is by R. W. Dudley of Derby.

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part illustrated

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FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 186

For Stamp Enthusiasts

The Dominions

By F. E. Metcalfe

COLLECTORS who have the welfare of the stamp-collecting hobby at heart are greatly concerned at the avalanche of new stamps now being issued by most foreign countries. Anyone who gives the matter the least thought cannot help wondering what is going to happen to all these new stamps. Will they increase in value—which used to be the case with many of them—or will the sheer weight of new issues smother stamps issued previously? Believe me, this is no fanciful picture I have drawn, and attention must be given to it by those who spend more money on foreign stamps than they wish to throw away on a hobby.

You will notice that I have referred only to foreign stamps, for it is a fact that, with few exceptions, countries in the British Commonwealth are, in the main, exercising commonsense. That is the reason why our stamps are so popular, not only in the Commonwealth itself, as is natural, but outside it, too, in countries like the United States. Yet, with many of these countries having issued stamps for a hundred years or more, to consider collecting all of them is quite out of the question for most of us. That is why even grown-ups have to impose a limit, some taking just a group of countries, and others, who want some of everything, limiting their collecting activities to, say, the stamps of the KGVI reign, or those issued since the Queen came to the Throne. Collections formed to these limits are the most popular. In the case of "KGVI" stamps it is still possible to form a quite imposing lot, paying prices not much above face value. As for the "QEII" issues, these are attracting new collectors all the time, as sales of the Commonwealth QE Catalogue prove—they are up almost 20 per cent. on last year.

A letter I received recently indicates that some young collectors want to limit their collections still further. A London correspondent had this to say: "I prefer used stamps, and I know how hard it is to get them so from the small colonies, unless I pay over face value. As I can only spare out of my pocket money about a shilling a week can you tell me what I can do to form a collection? Personally, I like the stamps of countries like New Zealand and Canada."

Well my reply to that correspondent was that he had really answered his own question. I suggested he should go in for stamps of Australia, Canada, India, New Zealand and South Africa, starting with either the KGVI or QEII period, for all of these countries play fair with collectors. By that I mean that there is always plenty of each stamp issued, and, used, they can be bought cheaply. Thus such collectors as my correspondent are able to make a good showing for a quite moderate expenditure.

My correspondent wrote again to say that he had discussed my reply with his father, who had agreed to buy him a Merton loose leaf album at the cost of 28s., and a Commonwealth QE Catalogue for 7s. 6d., and that he was all set to collect stamps of the countries I had suggested, except India, starting with the present reign. Well, I think that was a very sensible way of going about things, and to the many young enthusiasts who for one reason or another cannot, or do not want to, spend a lot of money on stamps I strongly recommend a similar course. The stamps which his choice embraces contain all that even a philatelist can want, let alone a young beginner.

Take our own issues, for instance. There have not been many special issues but we have had two changes of watermarks, as well as the line stamps (graphite and phosphor), all of which are quite easy to obtain. Then we have Australia. Here there are a number of special stamps, covering every conceivable subject. Only recently there was a stamp issued to commemorate the 100th anniversary of the famous Melbourne Cup. There was a bit of a fuss about this issue, but the stamp is quite interesting, as are many others from the same country.

Now we come to Canada. Again, all kinds of events have been commemorated by stamps, and if care is taken to select nicely-cancelled copies you will get a great show, among which I think the four stamps issued in 1957, as publicity for outdoor sports, will perhaps be the favourites. But the stamp to make sure of is the 15c. "U.P.U." Congress issue of 1957. It is not an expensive stamp, and a copy can be obtained for about a couple of shillings; but it is getting scarcer. All the other later special issues can be bought for a copper or two.

New Zealand is the next country on our list. Here you will be able to really get your teeth into collecting, as there are certain varieties of paper, etc., well worth including. But don't worry, what little you might find difficult the catalogue explains thoroughly. It is this country which issues the "Health" stamps, none of which is expensive and all of which are interesting. The first "Christmas" stamp (one will probably be issued every year from now on) is a real beauty, and a fine used copy can be bought for not above 6d. The stamps of New Zealand are particularly popular here in Britain, just as in the country which issues them.

South Africa is the last country on our list, and although that country's stamps lack the appeal of the others they are still worth including, for all are cheap and easily come by. There are also some nice varieties worth looking for, and they can be found, too, for I came across two quite recently. I would like to give details of some of them, but there is not room to do so. You will find, however, that the good ones are catalogued.

And now, before I close these Notes, a word about condition. You will find many used stamps about, but be sure to reject all that are not clean and nicely cancelled. Reject the others even if they are given to you, for one poor looking stamp can spoil the appearance of a whole page. Note the cancellations on the stamps illustrated. That is what you should aim at. And don't forget, you want a *plain* album, so that the resulting collection will *look* your work. And that's how you want it to look, isn't it?

Stamp Gossip

KIM'S GUN

PAKISTAN has been in the philatelic news quite a lot lately, for what with provisional stamps and a new definitive issue, caused by the change in currency, plus several special issues,

(*Continued on page 187*)

TRINIDAD AND TOBAGO

SECOND CARIBBEAN SCOUT JAMBOREE COMMEMORATIVE ISSUE

4th APRIL, 1961

To commemorate the Second Caribbean Scout Jamboree to be held at Valsayn Park, Trinidad, the Government of Trinidad and Tobago are issuing two special postage stamps.

The stamps, 8 cents and 25 cents, are of common design, and depict against a background of a map of Trinidad and Tobago, scouts of four different races, thus symbolising the Jamboree motto "Unity". The portrait of Her Majesty the Queen, also included in the design, surmounts a reproduction of the Gold Wolf Scout Award of which the Queen is the only holder.

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Stamp Gossip—(*Continued from next page*)

The new set was printed by Waterlow and Sons—the stamp printing side of whose business is being taken over by De La Rue—and it is a very fitting finale to a company which for many years has printed fine stamps for many countries. Later, there will be more prints, and no doubt De La Rue will use the same plates, but perhaps we will get new perforations, or shade varieties. So you had better get your set as soon as you can, for new varieties mean rises in prices for replaced printings. See what I mean?

THE TIP OF THE MONTH

I am going to be a bit philatelic this month, with my tip, and the stamps I will mention are of Great Britain. They belong to the present reign and, although low values, were withdrawn quickly, or, rather, used up quickly, and are now proving hard to find in mint condition. Now they are needed to fill up sets, so prices are going to increase quite a lot as time goes on, I am afraid. Here are the stamps: 10d. Tudor Crown wmk (CW No. 50); 1s. St. Edward Crown wmk (CW No. 73), and 3d. (wmk sideways) St. Edward Crown wmk (CW No. 64c). I know that many *Meccano Magazine* readers who collect our British "QE" stamps use a Commonwealth Catalogue, so I have given those catalogue numbers to facilitate checking up. The 3d. stamp is as scarce used as mint, but the other two values should be looked for mint.

FOR OTHER STAMP ADVERTISEMENTS SEE ALSO PAGE 184

collectors have had to be on their toes to see that they got them all. The "National Jamboree" stamp issued last Christmas Eve has proved the most popular, no doubt because of its design, which depicted Kim's Gun, immortalised by Rudyard Kipling in his story *Kim* and now lying on the Mall in front of the Lahore Museum.

It was a graceful gesture by the Pakistan postal authorities to picture the famous gun on one of their stamps, especially as it has close associations with the Scout movement. Incidentally, I don't suppose that Kipling means as much to young readers today as he did when we older folk were their age. He is now right out of date, of course, for his poetry does not conform with many modern tastes.

COLLECTORS' FETISH

Portmanteau Issues is the name applied by collectors to those stamps, such as the "Europa", "Olympic Games", and "refugee" issues, which are issued in common by a number of countries to mark some event or Cause. They are generally very popular with collectors. In fact, I am sure that some readers of these Notes have gone in for them. Many of the stamps issued thus have gone up in price quite a bit, and here is a snag. We collectors are funny folk, and one of our "funnyosities" is to make a fetish of completeness. We must aim at having *all* the "Refugee" or the "Olympic" Games sets, etc. And what is wrong about that, you will ask? Plenty, for those postal administrations who issue stamps almost solely for sale to collectors—and their numbers are growing—know of our weakness, and so issue limited numbers of stamps, which local people "in the know"

buy up and then sell at fancy prices, which many of us are silly enough to fall for in our anxiety to complete our sets.

Miniature sheets—you know, those little sheets of about half a dozen stamps, very often not perforated—are a favourite trap and, generally speaking, should be shunned. (Not, of course, those issued by New Zealand each year, in unlimited quantities so that everyone can buy at face value, and for a charitable cause which is of the very best.) I mean the kinds which are bought up by speculators who know that someone will pay the fancy prices they demand, just to have a complete set. So, by all means go in for the "Portmanteau Issues" if you feel like doing so, but remember some will be issued and only be obtainable at artificially inflated prices. Better to leave these alone, at least.

FRIGATE BIRDS

British Solomon Islands issued a set of three stamps on January 19 to commemorate the new constitution there, for even away in the far South Seas political changes are in the air. But never mind about that, although I should, perhaps, mention that this protectorate was established at the end of the nineteenth century, and the High Commissioner for Western Pacific was the ruler on the spot. Now there is to be a Legislative and an Executive Council, hence the postal issue to mark the change. The design is simple enough, for at the left the stamps bear a

portrait of the Queen and at the right a Frigate Bird. A simple picture, but rather attractive. A philatelic feature rather unusual with such issues, which is making some collectors go in for two sets, is that not only is the watermark sideways, but it is to be found either to the right or to the left, in all three values. Just have a look at your set.

NORTH BORNEO

And now we must give full attention to the handsome issue released for North Borneo on February 1. A full set, going up as it does to 10 dollars, costs around 58s., but there is no need to go up so high, for every stamp has a most interesting design. Eleven of the sixteen values—up to 50c.—can be bought for 5s. 6d. This shorter set depicts all kinds of strange animals, etc., and nicely mounted, will result in a really fine page in your album. This territory's first proper stamps were issued in 1883 by the British North Borneo Chartered Company. The Japanese moved in during 1942, but they were out again three years later, and a military administration ran things until 1950 when North Borneo became a British colony, and even in this changing world it still retains that status.

(*Continued on previous page*)

By E. W. Argyle

Locomotives On Stamps

THE first railway engine to be built in America was the "Tom Thumb" of Peter Cooper, an ironmaster, and it was given a trial run, at Baltimore, on August 28, 1830. It is shown on the stamp above, commemorating 125 years of U.S. railways, between a "Pioneer" horse-drawn rail-car of 1829 and a modern diesel-electric locomotive of the Baltimore and Ohio R.R. The "Tom Thumb" had a vertical tube boiler, the tubes being made of gun barrels, and one cylinder measuring 3¼ inches × 14½ inches.

The first steam railway of Hungary was the Central Hungarian Railway connecting Pest and Vac, which opened for traffic on July 15, 1846. Its pioneer locomotive, shown on the stamp above, was the "Deru" ("Sunshine"), which made its first journey on that date under its original name "Pest". This locomotive was built in the Belgian works of Cockerill-Seraing. In those days, all Hungary's locomotives were manufactured abroad.

PHOTOGRAPHERS' PAGE

More Hints For The Beginner

This is the second of a series of articles for the young camera enthusiast. In his next feature the author will advise on choosing a viewpoint.

EVERY time we take a picture with a camera a *negative* is made. When we press the shutter release on the camera, the shutter opens for a very short time and light is let in, on to the sensitive coating, or emulsion, of the film. This is called "exposing" the film and the amount of light reaching the film is called the "exposure".

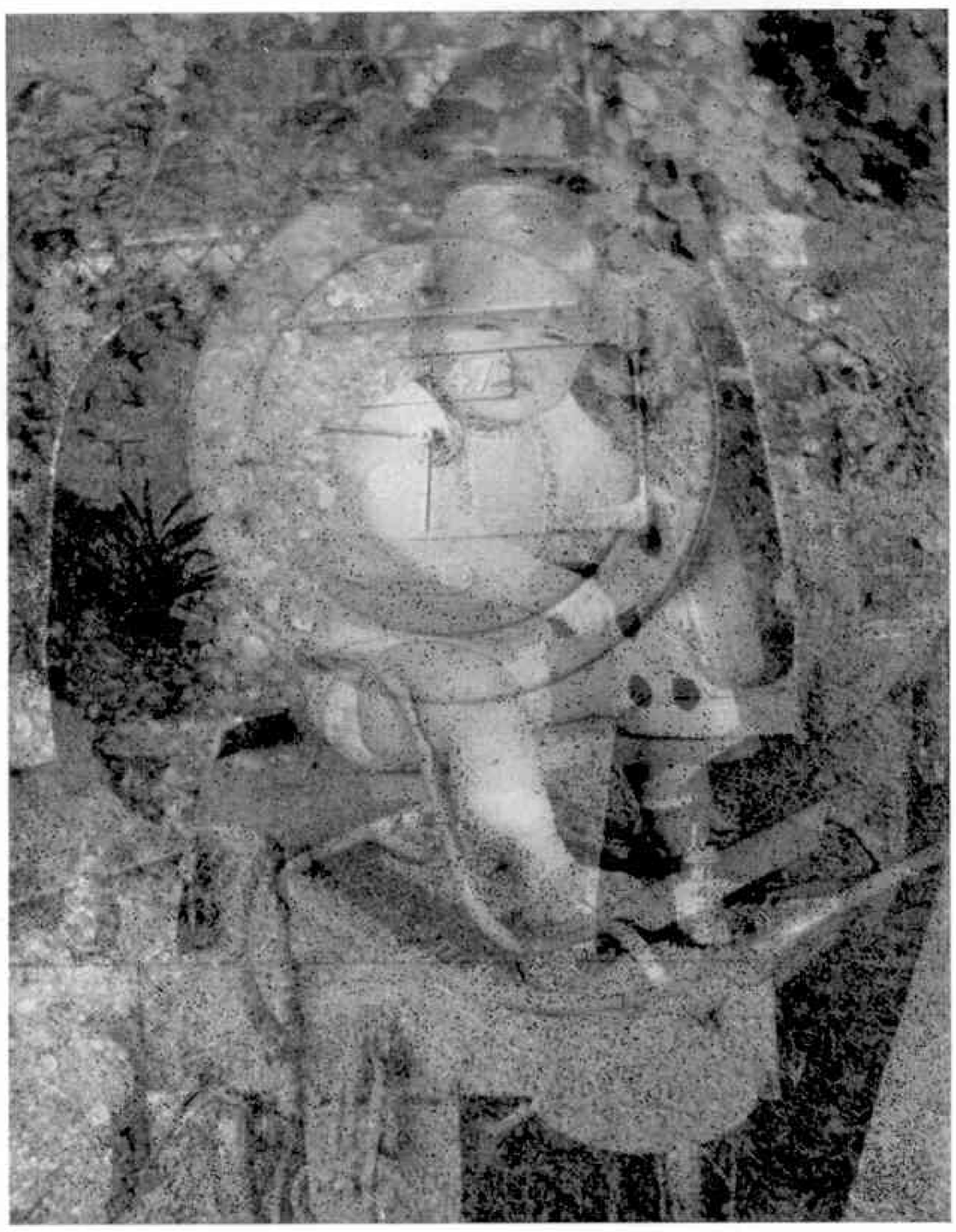
BY
H. G. FORSYTHE

An image of the subject is formed on the film which cannot be seen at first but, when the film is treated with certain chemicals, the image is made to appear. This is, of course, the process we call "developing" the film. In the image which appears on the film, the light parts of the original scene appear dark and the dark parts light. This is the negative. If we now take another picture of this negative—and this is what we really do when making a print—the light and dark parts are reversed again, and the print portrays the scene the camera recorded for us.

From this you will see that, before we can hope to get a good print, we must make our negative as good as we possibly can.

Last month, we discussed the importance of taking care in using the camera. It is equally important to use the right film for the subject we wish to take. Nowadays, there is a bewildering array of different kinds of films on the market and it is sometimes difficult to know which is the right one to use. For most ordinary subjects out of doors, in fair weather, always use a "medium speed film". The term "speed" when applied to films really refers to their sensitivity to light. The "faster" a film, the more sensitive it is and the smaller the amount of light needed to get a good picture. But fast films only give their best results when light is really dim, so only use them when the weather is very dull or when you want to take pictures at night.

I shall have more to say about fast films when we talk about taking pictures after dark, but now have a look at this month's picture. This is a typical example of "Photographer's Nightmare!"



A sad case of Photographer's Nightmare. This article tells you how to avoid double exposures which lead to results of this type.

Have you ever had a picture that looks like this? It is really a double exposure, or one picture taken on top of the other, and is caused by forgetting to wind on the film between shots.

To avoid "Photographer's Nightmare" always make it a firm rule to wind on the film *immediately after* taking a picture. By doing this, your camera is not only ready for the next shot but there is no chance of double exposure trouble. Some cameras have an automatic device which stops you taking another picture until the film is wound on, but many cameras, including some really expensive ones, still rely on the photographer remembering whether or not this has been done.

BOOK REVIEW

From the Educational Supply Association Ltd. comes a fine new title in the *How Things Developed* series of their popular "Information Books".

The author, John W. R. Taylor, who needs no introduction to *M.M.* readers, begins with an informative survey of the earliest years of flying (and, of course, gliding). He traces the role of aircraft through the "First Air War" as he calls it, discusses great flights such as those made by Alcock and Brown, Hawker, Cobham, Lindberg and Mollison, and the possibilities of flying for all. Many other aspects of aeronautics are discussed before we reach the final exciting chapter on the new pioneer age.

Wholly objective in tone and written in commonsense terms **Aeroplane,** which is priced at 9/6d. carries a useful glossary of aircraft terms and is of interest to children and grown-ups alike.

Theatres of the Deep—

(*Continued from page 160*)

surface until a show is finished. Aided by the buoyancy of the water, they perform all kinds of acrobatics which would normally be quite impossible. There is even an underwater dressing room which is kept free of water by air pumped down from the surface, and the girls can swim into this for a few moments to rest in the pressurised interior. This kind of attraction has become so popular that it has recently been introduced by an hotel in Miami called the Everglades. There, a complete underwater ballet is staged in a huge tank on the top floor of the hotel.

In the Land of the Ancient Turks—

(*Continued from page 157*)

Tumlu, Andil, Cum, Anacik, Belmece, Kozan, the Castle of the Forty Gates, and many others.

Perhaps the most impressive fortress in the area is Ana-varza. It was certainly the easiest to approach as we were able to drive our vehicles to the foot of the rock on which it stands. This castle, the biggest in the area, is built along the ridge of a hill which rises sheer from the surrounding plain. It was the royal burial vault of Armenian kings in mediæval times, and its fortifications extend for over a mile. Beneath it lies a ruined Roman city to which, long ago, an aqueduct brought water from a source of supply 30 miles away. Scratching in the soil we found Roman coins, jewellery and pottery. It is, in fact, an archæologist's paradise.

In early September, our work completed, we packed our vans, and regretfully left Kozan. The village turned out in force to see us leave, and as we bumped along the dusty track on our journey home we could not help feeling sad that our Crusade was over.

Ships' Figureheads on Tresco—

(*Continued from page 153*)

fins, an open mouth showing a double row of sharp teeth, and curious, blue-pupilled eyes. It must have looked most appropriate in its setting, especially when the ship dipped down into the waves in stormy weather.

Along the side of the building are ranged five gold and white figures, all larger than life. Four are female figures in various draperies, with golden crowns on their heads and a touch of colour here and there. *Friar Tuck*, previously mentioned, is facing them, but in some respects he looks far more like a Roman senator than the accepted idea of the fat friar. In his hand he carries a cross, and a girdle of golden rope holds his creamy white habit in position.

Among the male figureheads is a fine model of *Alexander I*, taken from an Austrian brig said to have sailed from Trieste. Larger than life, he is in full uniform with heavy gold epaulettes, medals, and the red ribbon of some Order across his chest. Except for sideburns, he is clean shaven and his pink cheeks and blue eyes make him a very handsome fellow.

An elegant gentleman

Another male figure looks very like Lord Byron. This was rescued from the brig *Roseville* of London, lost by fire in St. Mary's Roads on March 3, 1885. In a tight-fitting blue jacket, red waistcoat and white stock—which was mid-nineteenth century fashion—he appears a most elegant gentleman, with a mass of curly dark hair and sideburns.

One of the figureheads which has not yet been fully restored is the *Volunteer*, which depicts a kneeling soldier who probably once held a gun. His tall cap is decorated with Prince of Wales' feathers, but the original colours of the uniform have been almost obliterated. He came from a coasting vessel which used to carry coal down the Bristol Channel to the islands.

Another as yet unrestored figure is that of an eastern potentate who wears a turban and carries a couple of daggers in his belt. This interesting piece of sculpture came from a Scillonian vessel named the *Bosphorus* which traded with Middle East countries. A beautiful female figure in a flowing dress is also still only partly restored and there are other pieces, not yet on view, which need repair. All the funds for the work done so far have been raised by public subscription. It is hoped that further money will be forthcoming so that the entire collection may be put on display.

"It's a table George made."

Railway Notes—

(*Continued from page 165*)

beyond, also for Liverpool until diverging later, go approximately straight ahead; to the left lies the route for Chester and North Wales; to the right that for Manchester. The four-track trunk route south leads to Stafford and London, with important secondary line connections to the Birmingham area and elsewhere; diverging lines on the right carry W.R. and jointly-operated long-distance trains, etc. via Shrewsbury; the former North Stafford tracks on the left form the Potteries–Stoke-on-Trent link.

Platforms 1–2 are the chief northbound ones, long enough to handle two trains or portions at once in many cases, with intermediate points and signals. No. 3 can be used in either direction, but chiefly shares with Nos. 4–5 the handling of southbound stopping trains. There are separate through centre tracks for up and down expresses, excursions and so on not booked to call. Inset bay platforms at each end for starting and terminating trains are styled 2A, 5A, etc.

They Were Different Then—

(*Continued from page 171*)

918 c.c. side-valve engine, but in 1952 an 863 c.c. ohv unit was adopted, giving 30 b.h.p. at 4,800 r.p.m. Then, in October 1956, the famous Morris Minor 1000 appeared, providing extra punch to go with the fine steering and road-holding. The new engine—a 948 c.c. ohv unit, developing 37 b.h.p. at 4,800 r.p.m.—gave the Minor 1000 a maximum speed of nearly 75 m.p.h. with acceleration to match. At the end of last year, it was announced that the millionth Minor had been sold—proof positive of its appeal.

Latest example of the genius of Alec Issigonis is the Morris Mini-Minor, introduced in August 1959. In this revolutionary little car, which has four-wheel independent suspension and provides comfortable seating for four within a wheelbase of only 84 inches, the 848 c.c. 4-cylinder ohv engine is mounted transversely, the drive being transmitted to the front wheels through two short shafts. The Mini-Minor is capable of 70 m.p.h. with a petrol consumption of up to 50 m.p.g.

Of particular interest is the Mini-Traveller, one of the smallest station wagons ever built. This attractive little car, finished in authentic Morris colours, is now available as a Dinky Toys model.

TRACTION ENGINE RALLY AT ANDOVER

The now well-known annual Traction Engine Rally organised by the Andover and District Model Engineering Society will be held this year on Saturday May 13, and as usual will take place at Finkley Manor Farm, near Andover, Hants. The gates will be opened at 12 noon and the programme will commence at 2 p.m. Admission: Adults, 2/– (including programme); Children, 6d. Car Park: Cars, 2/–; Motor Cycles, 1/–.

The Rally has become more popular every year, and it is expected that this year from 25 to 30 steam traction engines will take part, and there will be the usual interesting display of veteran cars. The programme includes engine rally race, musical chairs, obstacle course, and ladies' steering contest. Another item of great interest will be the horse-drawn steam fire engine display. Inside the big model engineering tent there will be the usual grand display of models, and these will include large-scale working model traction engines, and miniature railways in operation.

The Rally Secretary, Mr. G. Howell, of 5 The Crescent, Andover, will be pleased to give further particulars to readers who hope to be able to visit the Rally, and who will write to him for them.

Fireside Fun

Candidate: There are 100 gaols in this county and I'm proud to say no member of my family has ever been in one of them.

Voice from audience: Which one is that?

* * * *

A beatnik lived in a room with just a bed and chair. One night a fellow beatnik happened in and saw two magazines lying on the floor.

"What didja do, man," he asked, "hire a decorator?"

* * * *

The nice thing about dictating letters is that you can use a lot of words you don't know how to spell.

* * * *

Diner: Waiter, I have only five shillings. What would you recommend?

Waiter: Another restaurant, sir.

". . . And you were quite normal before you bought your five-speaker stereophonic record player?"

Little Bobby had been well instructed by his mother as to his manners at Sunday School. When he returned from his first visit, she inquired, "Did you show the teacher and other children how well you behave?"

"Yes, mother," he replied. "I even said 'No, thank you,' when the teacher offered me a plate full of money."

* * * *

"Look here, Pat, when be you goin' to pay me them three pounds for pasturin' your cow? I've had her now for about ten weeks."

"Why, the critter ain't worth more'n four pounds."

"Well, supposin' I keep her for what you owe me?"

"Not by a jugful. Tell you what I'll do, keep her two weeks more, and you can have her."

* * * *

"Jones, your essay on 'My Mother' was just the same as your brother's."

"Yes, sir: what else could you expect? We have the same mother."

* * * *

Angry customer: But you guaranteed that this watch would last me a lifetime.

Watch-maker: I know—but you didn't look very healthy the day you bought it.

* * * *

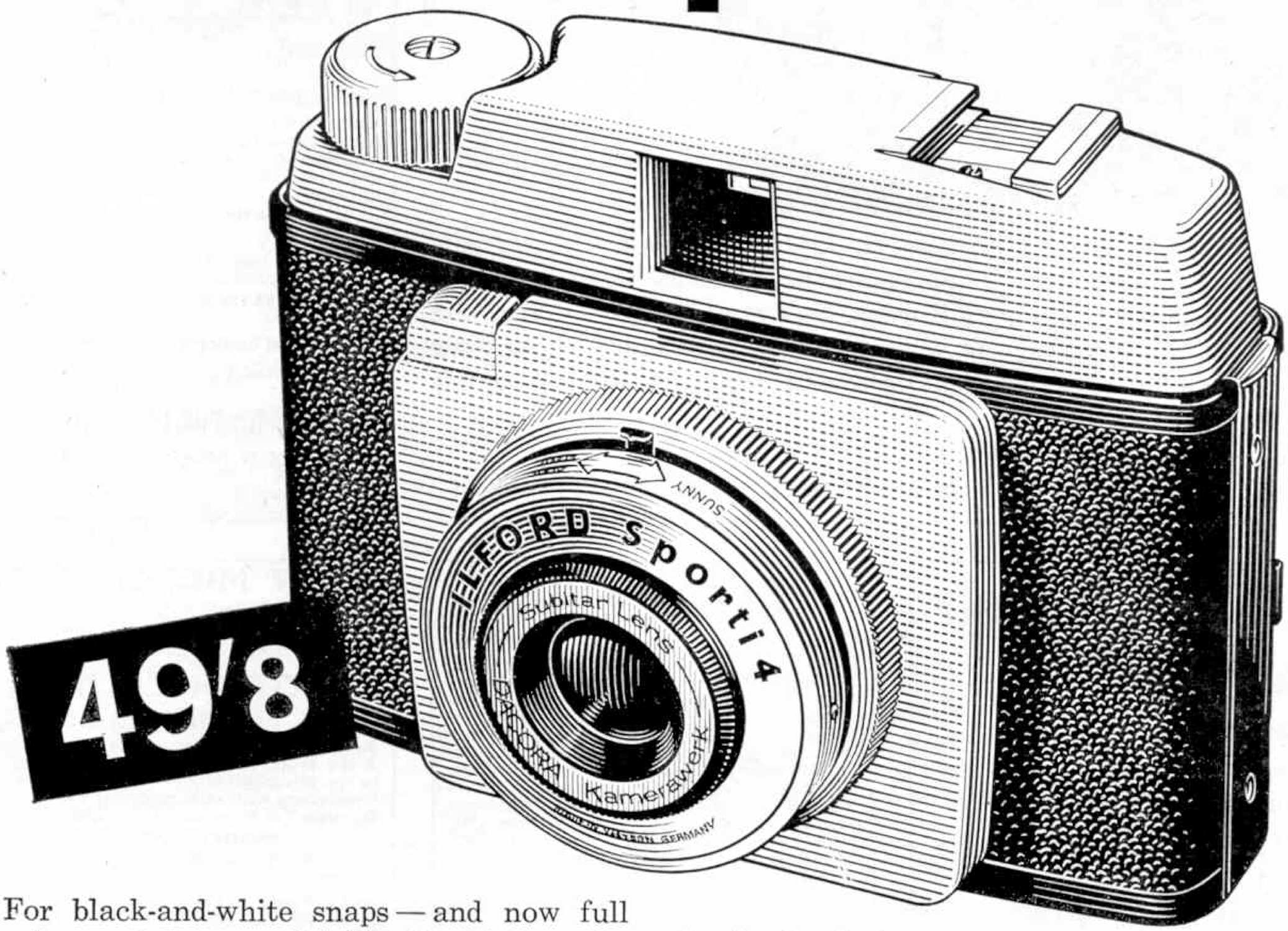
Two old caterpillars crawled slowly along the ground when a butterfly fluttered gaily past them.

The first one nudged his friend and said, "You'll never get me up in one of those new-fangled things."

She had just been interviewing a new gardener, with the benefit of her mother's advice. After things were fixed up and the man was engaged, she asked "Mama, why did you insist on my taking the little one? The tall man had the nicer face."

"When you're choosing a man to work in the garden, my dear, faces don't count," replied mother. "Look at his trousers. If they're patched at the knees you want him; if they're patched on the seat, you don't."

YOU'LL CLICK WITH THE ILFORD Sporti 4



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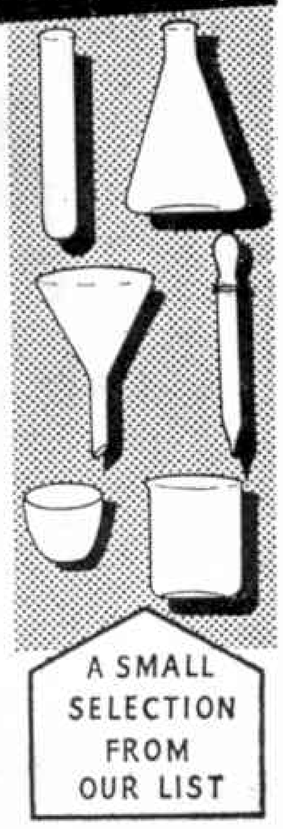

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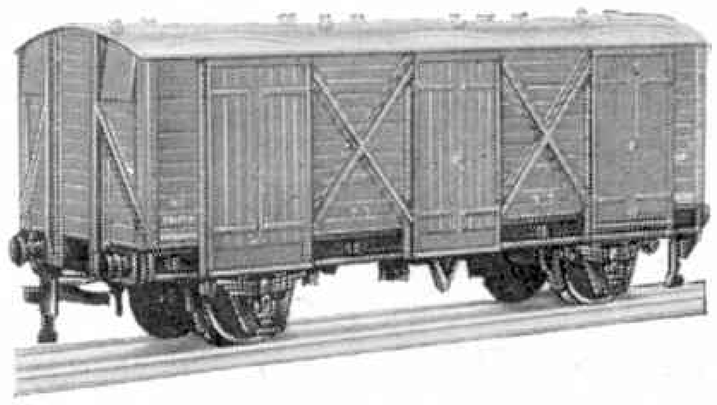

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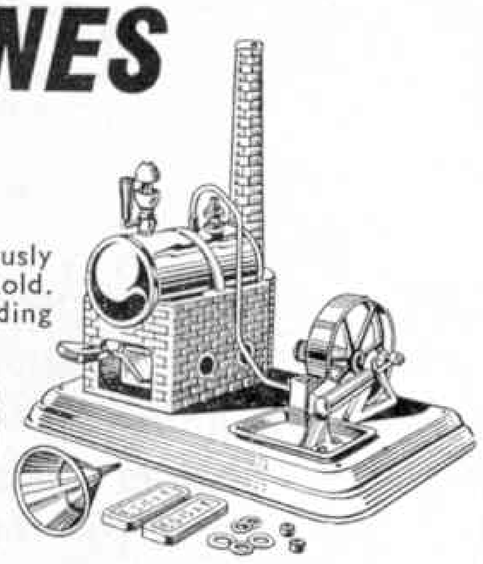

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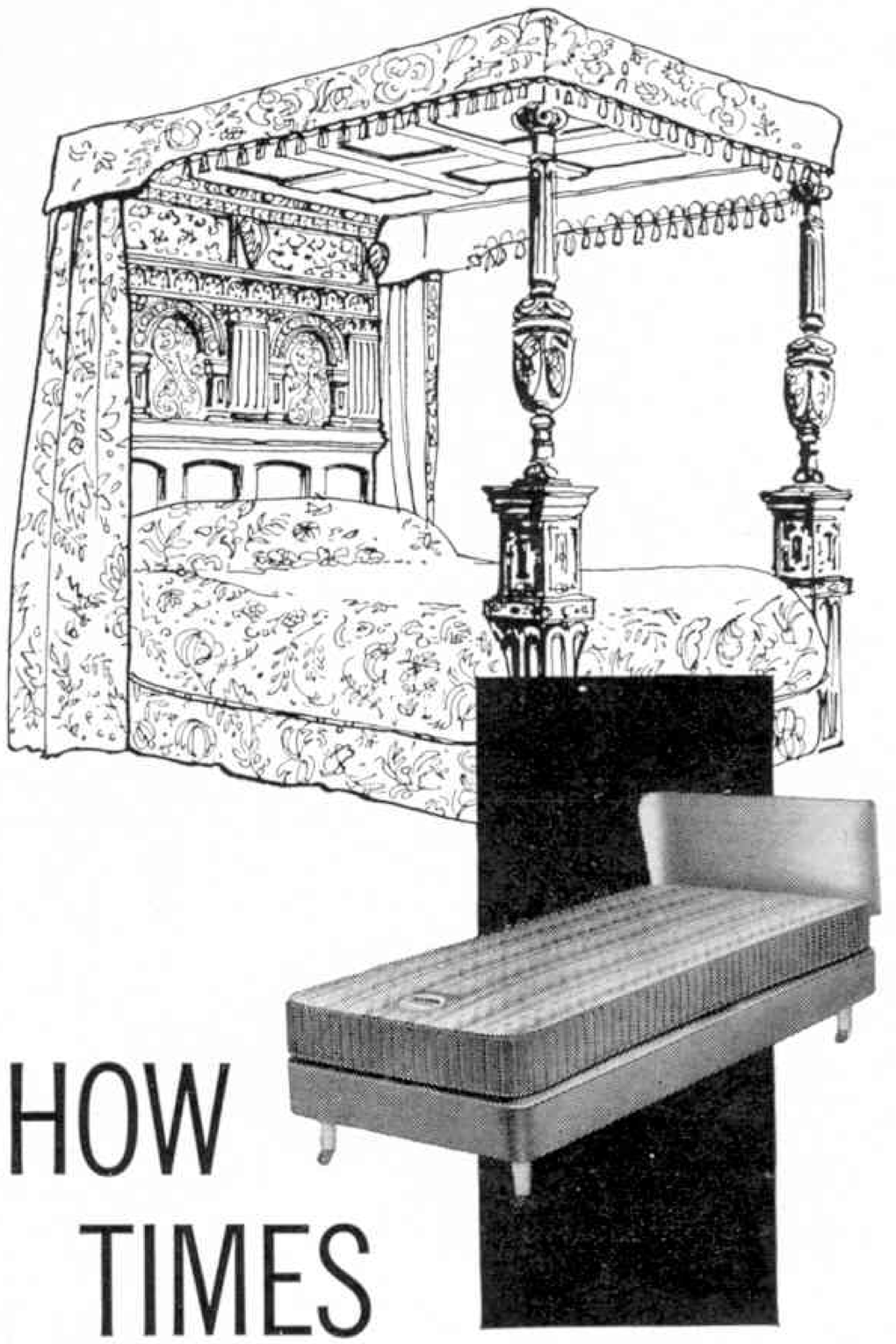

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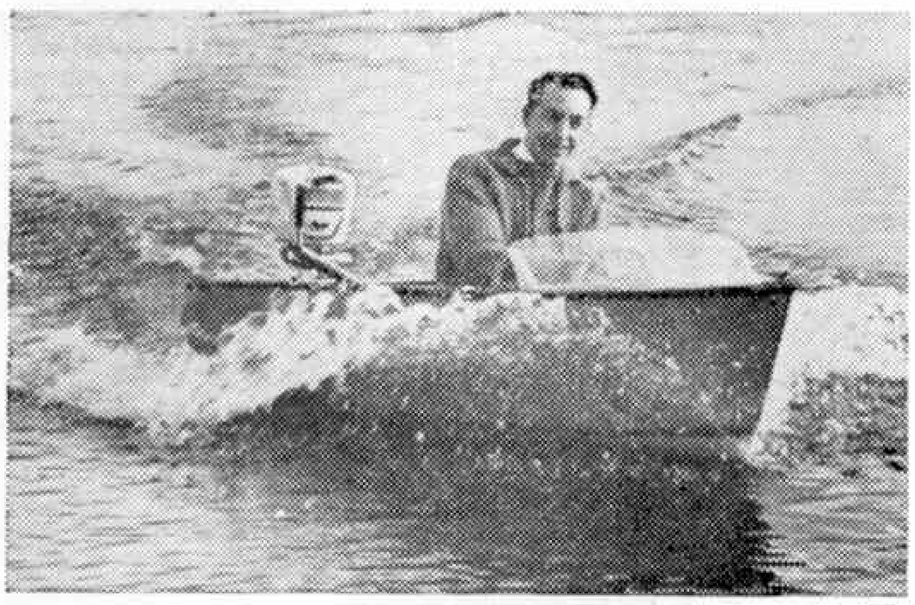

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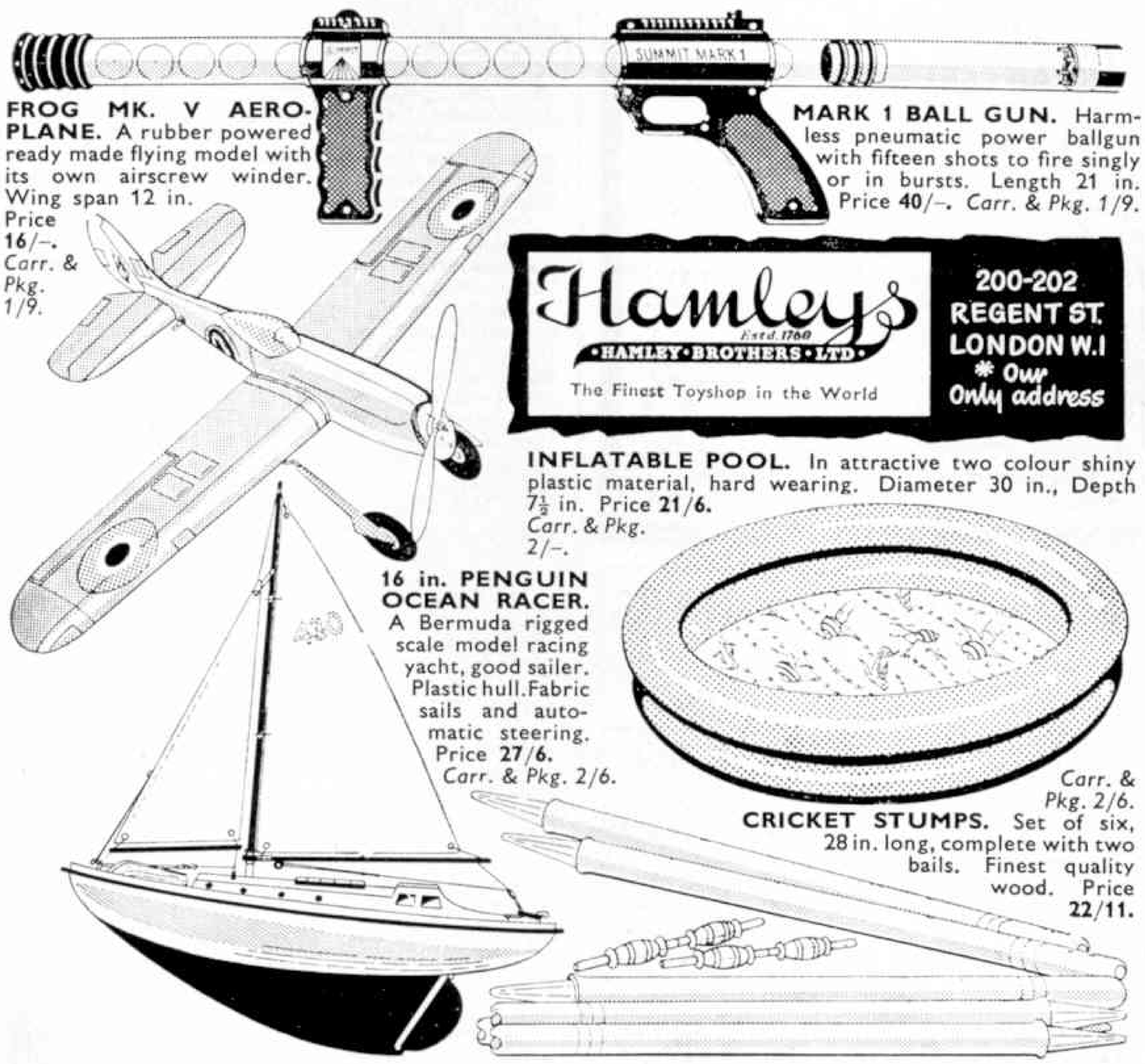

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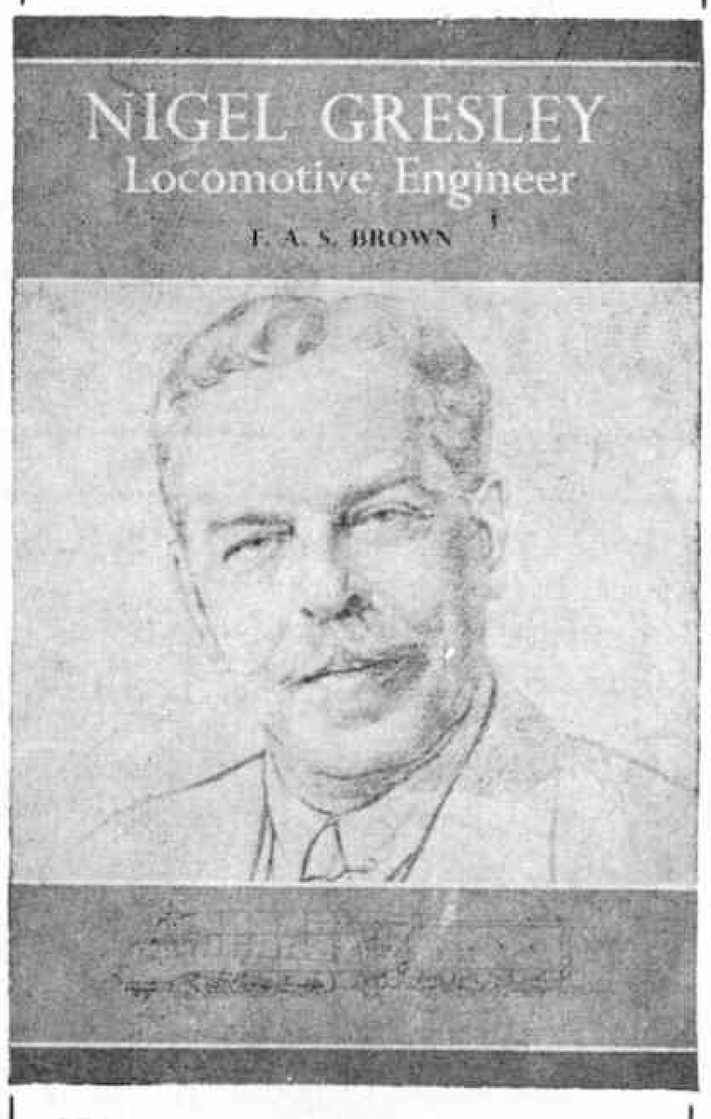

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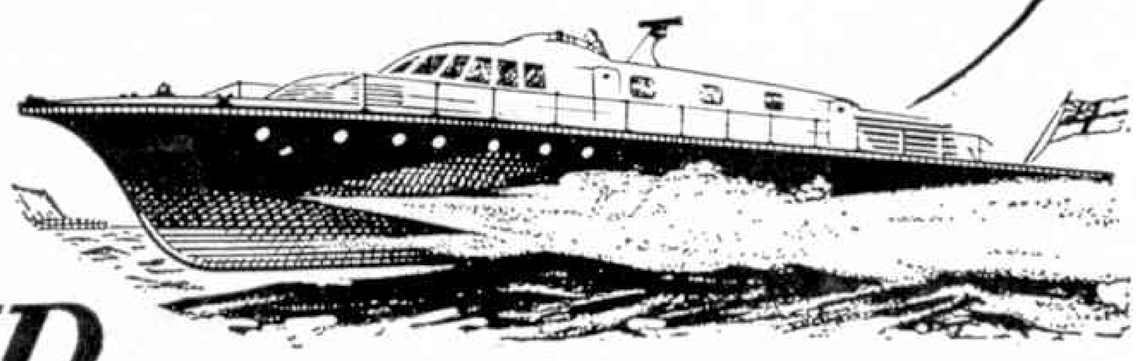

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